AIDS in Africa during the Nineties: Young People in Kenya

Office of the President, Kenya
National AIDS Control Council

Ministry of Health
Kenya National AIDS/STD/TB/Leprosy Control Programme

The MEASURE Project

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1. Introduction and background

Kenya's HIV surveillance system has recorded a sharp rise in infection rates among pregnant women in many parts of the country since the early 1990s. Recent estimates indicate that the national HIV prevalence is about 15% (UNAIDS, 2002). This is worrying for many reasons. In the first place, it suggests that existing HIV-prevention campaigns are failing. Secondly, it makes it more unlikely that future prevention campaigns will succeed in bringing down levels of new infections to zero. This is because as HIV prevalence in the population rises, so does the likelihood of encountering a sexual partner who is infected. Modest changes in levels of risk behaviour may therefore not directly translate into lower risks of infection with the virus.

At very high levels of HIV prevalence, any sexually active adult linked in a sexual network with other non-monogamous men and women will be at high risk of infection. Adolescents, who are beginning to become sexually active, are at particularly high risk of HIV infection. At this point, establishing safe sexual behaviour from puberty becomes arguably the most important and potentially most effective long-term weapon against the continued spread of HIV.

Many countries badly affected by HIV are therefore focusing their attention on young people. Prevention campaigns aimed at young people generally work to

- Increase knowledge about HIV, how it is transmitted and how it can be prevented
- Encourage young people to abstain from having sex at all, preferably until they marry
- Encourage young people who are sexually active to have sex with only one partner, ever
- Persuade young people to use condoms if they do have sex with anyone other than a lifelong, faithful partner

Monitoring progress towards these goals is difficult but not impossible. Many sources of information about young people and their sexual behaviours already exist (e.g. Nzioka, 2001; Bauni & Jarabi, 2000; Ndinya-Achola et al., 1997) in addition to the data regularly collected by DHS and UNAIDS. Bringing all these sources together can help explain the status quo and give an idea of whether past prevention efforts have had any real impact on what young people know about AIDS and how they behave in their sex lives.

This summary report aims to bring together and examine existing information about adolescent sex in Kenya during the nineties. It discusses sources of potential difficulties in interpreting those data. It then looks briefly at some background demographic factors which may illustrate changes in the lives of young people in a rapidly modernising world: changes in schooling, in work patterns, in mobility and in exposure to modern media such as television. The report goes on to examine evidence for the success of major prevention strategies: what do young people know about HIV and how to avoid it? What proportion of them are abstaining, and until what ages? Once they do start having sex, is it within marriage or outside it? Are they sticking to one partner? Are they using condoms? And have any of these factors changed over time? Having described behaviour to the extent possible, the report then looks at whether young people act on their knowledge about safe sex, and whether their perception of being at risk for HIV infection matches their behaviour. Current information about HIV prevalence rates in young people is presented, and the implications of the patterns of knowledge, behaviour and infection are summarised.

Table 1. Respondents in national surveys, by age and sex

Survey	DHS 1989 [1]	GPA 1989/90 [2]	DHS 1993	Kisumu 1997 [3]	DHS 1998
Data collection period	Dec 88-May 89	Not available	Feb-August	June-Nov	Feb-July
Women 15-19	1497	291	1,754	170	1,851
Women 20-24	1321	285	1,638	191	1,548
Women 15-49	7,150	1,501	7,540	961	7,881
Men 15-19		197	Not included	108	811
Men 20-24	160	205	526	147	589
Men 15-59	1,116	1,209	2,336	763	3,407

1 The men included in this survey were all husbands of female respondents, and therefore not representative of the total male population. The distortion is especially large at ages under 25, when only a small proportion of men in the general population are married.
2 This survey and the DHS did not include the sparsely populated North Eastern Province
3 This survey was limited to Kisumu district, Nyanza Province.

Data sources

The major source of data on nation-wide sexual behaviour in Kenya is the Demographic and Health Survey series (DHS). DHS surveys interview women and, increasingly, men randomly selected from a nationally representative sample of households. Questions deal with sexual and reproductive behaviour and contraceptive use. In recent years, a section on HIV and AIDS has been added to many DHS surveys. Kenya Demographic and Health Surveys (KDHS) were conducted in 1989, 1993 and 1998. In addition, a nationally representative survey of AIDS-related knowledge and behaviour was conducted in Kenya by the World Health Organization's Global Programme on AIDS (GPA) in 1989-1990.[1]

Other surveys conducted using similar methodologies exist on a more localised scale, or in selected populations. For example, a household survey was conducted in 1997 in the western Kenyan town of Kisumu as part of an international study of HIV infection, sexually transmitted infection and behaviour. Kisumu was selected because of its high HIV prevalence, and the data from Kisumu may not be typical of Kenya as a whole.

Table 1 shows the number of men, women and young people included in each survey. The Kisumu study provides the only information to date about HIV prevalence levels in young men and women in the general population by single year of age, and linked to behaviour. Kenya has for some years collected information on age in its regular sentinel surveillance system, which tests pregnant women for HIV anonymously. The Kenya National AIDS/STD/TB/Leprosy Control Programme (NASCOP) has recently made the information on HIV infection in 15- to 24-year-old women available for the first time.

Limitations of the data

The data used in this report are all collected by institutions with long experience in surveillance activities or in collecting information about people's sexual behaviour. They use internationally recognised methodologies, including random sampling of households, designed to ensure that data are as representative as possible. The data are not, however, without limitations.

One difficulty is that surveys have not always asked exactly the same questions, or used the same time reference periods, making direct comparison over time difficult. For example, in 1989 and

[1] To avoid confusion with the 1989 DHS survey, this 1989/90 survey is referred to in the text and graphics as the 1990 survey.

1993, respondents were asked if they listened to the radio once a week, while in 1998 they were asked if they listened to the radio daily. Such differences are described in the text, and where data for a given survey are not reported, it is generally because a comparable measure could not be computed from the questions asked that year.

The principle limitation is related to the nature of self-reported sexual behaviour. Researchers must ultimately rely on people to report their sexual activity accurately. There are several indications that they do not always do this. People sometimes do not recall exactly what age they were when they first had sex, or the number of partners they have had over a given period. Since sex outside of marriage is largely disapproved of, some people choose not to report such activity. Validation studies have shown that women are more likely to under-report extramarital sex than men, and some sexually active young people deny they have ever had sex at all.

Because of this, the true *levels* of risky sexual behaviour among young people are probably higher than reported in surveys. As long as the tendency to under-report does not vary over time, however, this does not much matter for the purposes of monitoring changes in behaviour. The *trends* in risk behaviour will accurately reflect rising or falling levels of risk, even if the levels are not a true reflection of what is occurring. A key question is: Do HIV prevention programmes affect the way people report their sexual activity? If they do, then falling risk behaviour over time may actually reflect the fact that people are reacting to prevention campaigns by being more secretive about their sexual behaviour, rather than by having less risky sex.

HIV-prevention campaigns promote abstinence, monogamy and condom use as "desirable" behaviours. This may encourage people to under-report sexual activity and over-report condom use. This has two implications for programming purposes. First, the levels of risk behaviour reported can be seen as a bare minimum of risky activity among young people. Secondly, programme managers should not be too quick to jump to conclusions about a programme's success if they see initial indications of behaviour change. Ultimately, success will be measured by a fall in incidence and prevalence rates.

This report looks only briefly at potential reporting biases, for example by looking for inconsistencies across surveys. Kenya has three DHS surveys, with an interval of four years between the first two and five years between the second two. The DHS does not interview the same individuals each time, but it does work hard to get a representative sample of individuals in each survey. Therefore, there should be some consistency over time in how a given age cohort reports its behaviour. In other words, people in any given age group should say roughly the same thing about certain past behaviours as people five years younger did in a survey taken five years earlier. Using the correct techniques for calculating age at first sex, we would expect people aged 20-24 in 1998 to say roughly the same thing about their loss of virginity as people aged 15-19 did in 1993. Any unexpected differences can help gauge biases in self-reported sexual activity. Reporting biases and associated methodological issues are described in much greater detail elsewhere (Zaba et al., 2002).

2. A changing world: What shapes young Kenyan lives?

There are many factors besides HIV-prevention campaigns that shape people's lives and behaviour. Changes in school attendance, experience of city life, exposure to media, patterns of marriage and employment may all affect young people's outlook and behaviour. This section looks at changes in some of these background factors in Kenya over recent years. The points of greatest interest are noted in the text and many are illustrated with tables and graphs.

Living standards

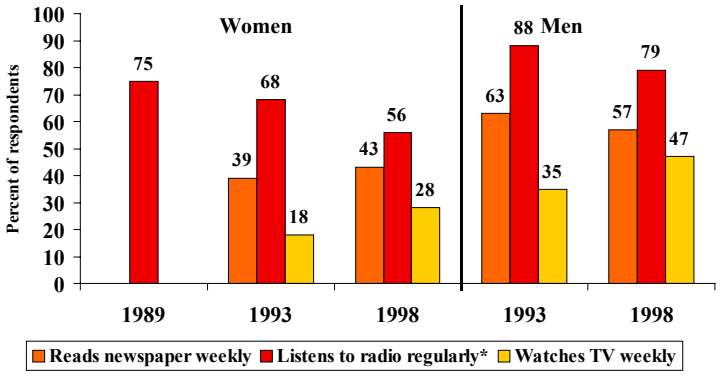
Electricity in the house was used as a proxy for living standards. These data were not available for 1990, but it is clear that very little has changed in the latter half of the 1990s. The proportion of young women aged 15-24 living in houses with electricity was virtually unchanged between the two surveys, at 13.4 in 1993 and 15.5 in 1998 (Table A1).

Exposure to media

Since some HIV-prevention activities have used the mass media, and since the media also provide information on the epidemic independently of official campaigns, changes in exposure to the media might be expected to influence young people's access to information about HIV. Radio was the most common medium overall, although Figure 2.1 suggests that listenership seemed to fall over the early 1990s. Three-quarters of young women listened to the radio weekly in 1989, and that dropped to just over two-thirds in 1993. In 1998 respondents were asked whether they listened daily, and 56% of young women and 79% of young men said they did. Weekly newspaper readership was relatively stagnant over the late 1990s for both sexes: the apparent fall in readership among men shown in Figure 2.1 may result from the inclusion of teenagers in the 1998 but not in the 1993 survey.

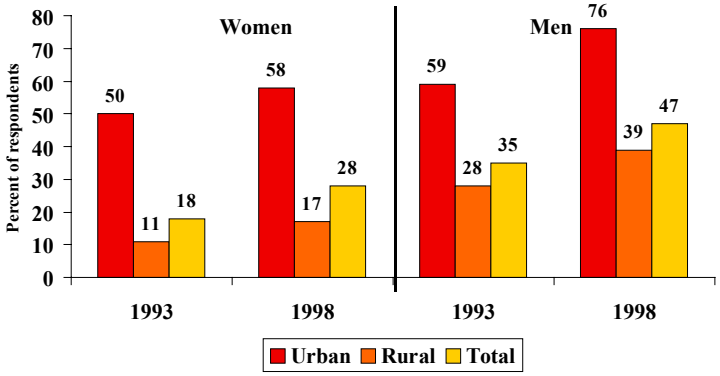
While TV remains the least common form of media, it is also the fastest growing among young people, and this is especially true in urban areas, as illustrated in Figure 2.2. The gap between male and female TV viewership has increased over time, and by the late 1990s twice the number of young men in rural areas watched TV on a regular basis compared to young women.

Figure 2.1
Exposure to various media,
women and men 15-24, 1989-1998



* 1989, 1993 weekly, 1998 daily; 1993 men 20-24 only

Figure 2.2
Watching TV at least once a week, women and men 15-24, 1993-1998



* 1993 men 20-24 only

Education

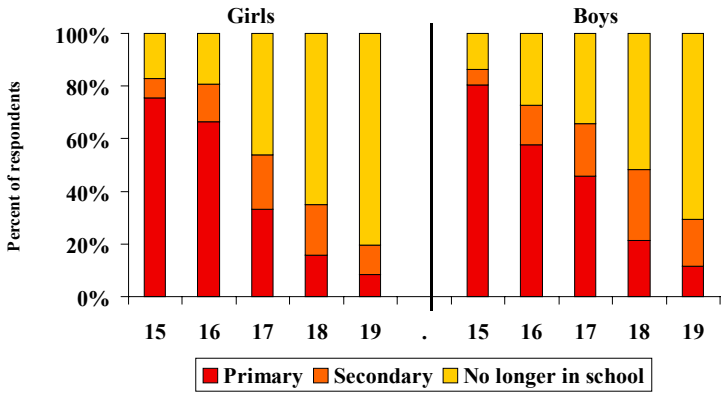
Education is arguably one of the most important influences in young people's lives. HIV-specific education had not been included in Kenya's regular school curriculum by 2000. Schooling has proved to have a profound effect on young people's skills and abilities and this may affect the decisions they make in many areas of their lives. The links between education and HIV-related knowledge and behaviour are discussed at greater length below. This section aims merely to describe trends in educational achievement among young Kenyans in recent years.

There has essentially been no change in the proportion of young women aged 15-19 who were currently attending school at the time of the surveys in 1993 and 1998. Around half of all women in their late teens were in school at the time of both surveys, and the proportion was significantly higher in rural than in urban areas ($p > 0.001$). In 1998, for example, 56% of 15- to 19-year-old girls in rural areas were in school, compared with just half that proportion among urban girls. Among men, the difference is much less pronounced: some 62% of 15- to 19-year-old men were in school in rural areas compared with 52% in urban areas. It may appear surprising that school attendance is higher in rural than in urban areas. However this can be explained by the generally later start of schooling in rural areas. Other disparities between urban and rural areas include the proportion of women in secondary school. By the age of 18, 70% of girls who were still in school in urban areas were already in secondary school, compared with just 55% in rural areas. All 18-year-old men still in school were in secondary school in urban areas, compared with only 56% in rural areas (Table A2).

It is worth stressing, however, that the majority of Kenyans in both rural and urban areas have left school by their late teens. This is reflected in Figure 2.3, which shows the proportion of teenagers in rural areas at different levels of schooling.[2] Of those that were in school, the majority were still in primary school up to age 17; this was true of boys as well as girls. Girls were more likely to be out of school than boys at each age, and less likely to be in secondary school.

[2] Proportions dropping out entirely were similar in urban populations, although the proportion in secondary school tended to be higher. However the numbers at each single year of age are too small to draw reliable conclusions and the urban data are therefore not shown here.

Figure 2.3
Schooling by age, rural teenagers 15-19, 1998



Overall, women aged 15-24 became slightly less likely to have abandoned their schooling before finishing primary schooling (Table A2). While 54% of all young women were no longer in school even though they had not completed primary education in 1993, the dropout rate fell to 49% by 1998. Young men were more likely to finish primary school, with 33% and 28% of 20- to 24-year-olds dropping out of school before completing their primary education in 1993 and 1998 survey rounds, respectively. It is significantly more common not to complete primary schooling in rural than in urban areas, for both men and women ($p>0.001$ for both sexes). It should be noted that these figures give only a minimum indication of primary drop-out, since it is to be expected that a number of pupils still enrolled in school at the time of the survey would give up school before completing their primary education.

The slight advances in primary education for women do not seem to have been carried through to the secondary level. Since almost all students enter secondary school before age 20, the proportion with at least some secondary education among respondents 20-24 can be taken as a good indicator of secondary school enrolment. About one-third of women 20-24 attended school beyond the primary level and there was little change in the nineties (Figure 2.4a). Urban secondary schooling levels were considerably higher than rural levels, but still about half of urban women 20-24 had no secondary schooling. Young men were more likely than women to have had some secondary education (Figure 2.4b), but the proportion has fallen significantly in the last decade ($p = 0.002$). As with women, men in urban areas were significantly more likely to have some secondary education than men in rural areas ($p <0.001$).

These schooling patterns have important implications for planning HIV-related interventions. A majority of young Kenyans do attend school at some time, but only a minority of girls and a bare majority of boys ever attend secondary school. In addition, a large proportion of those of sexually active age are still in primary school, whatever their final level of schooling. If young people are to be reached with preventative information before they become sexually active, it is necessary to reach them through the primary curriculum.

Employment

Throughout the nineties, unemployment was common in Kenya. Among women, employment rates were relatively stable between 1993 and 1998. About half of women 20-24 years were employed in 1993 regardless of their educational level, and there was no statistically significant

difference five years later.[3] Surprisingly, single women were no more likely to be working than married women. In a logistic regression that excluded students and looked at predictors of employment, controlling for educational level, marital status, age and urban/rural residence, the only factor significantly associated with the likelihood of being employed for young women in 1993 was older age (odds ratio 1.5, $p< 0.001$). In 1998, older age was also associated with greater employment (odds ratio 1.8, $p< 0.001$), while having more education (odds ratio 0.76, $p<0.01$) and being single (odds ratio 0.83, $p<0.05$) had a negative effect on greater employment.

The picture among young men was very different, as shown in Figure 2.5, which shows data for men and women in their early twenties. Young men were more likely to be working than young women, but unemployment soared during the late 1990s, when more educated men were more likely to be unemployed than the less educated men. In 1993, 90% of men aged 20-24 who were not students said they were working. Just five years later, only 62% had work. Include teenage men who have dropped out of school, and the youth unemployment rate among Kenyan men in 1998 was 47% – only marginally lower than the rate for women.

Why should unemployment be higher among more educated men than among those with at best a primary education? The difference, illustrated in Figure 2.5, is not well explained but maybe connected to the weakness of the formal sector economy in Kenya. Less educated men may be more liable to find employment in the "jua kali" or informal sector, which may have been less affected by the infrastructural, governance and other difficulties that plagued the formal sector in Kenya throughout the 1990s. Interestingly, there were only marginal differences in unemployment between urban and rural youth.

Marriage

Another potential reason for school drop-out, especially among girls, is marriage. Marriage patterns are described more fully below. But a first look at the data reveals no significant changes in patterns of marriage across surveys. Between 15 and 18% of teenage women were married at all survey rounds, and the proportion more or less quadrupled among women aged 20-24, again with little difference between surveys (Figure 2.6). There was also no significant difference in marriage patterns between rural and urban areas.

Almost all teenage women who were married were out of school. Overall, some 27% of teenage girls who were not in school were married, and again there was no change between 1993 and 1998 (data not shown).

As expected, young men were far less likely to be married than young women. Between 16 and 19% of men aged 20-24 were married at the time of any survey in the 1990s, while only one teenage man in 100 was married. As with women, marriage patterns among young men did not change over the 1990s.

[3] The wording of the question about current employment used in 1989 differed significantly from that asked in subsequent years. The data for 1989 are therefore not presented here.

Figure 2.4a
Secondary education among women 20-24, 1989-1998

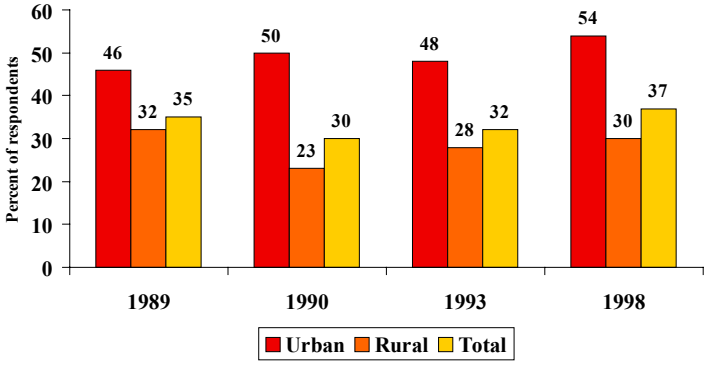


Figure 2.4b
Secondary education among men 20-24, 1989-1998

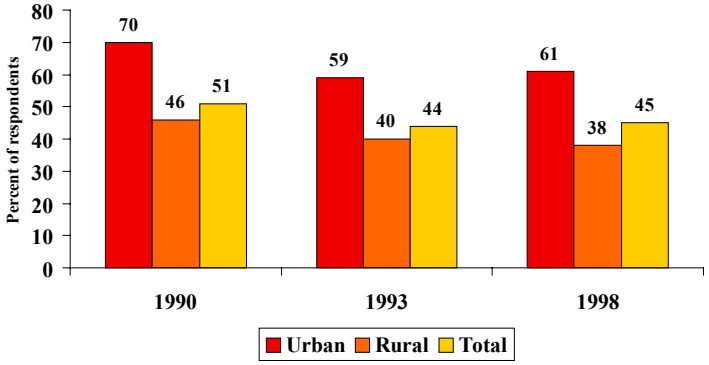
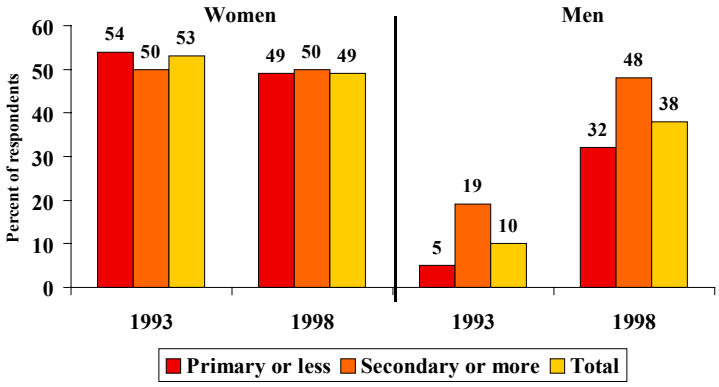
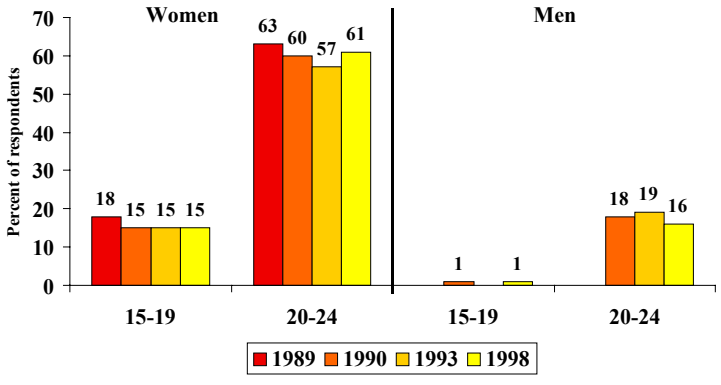


Figure 2.5
Unemployment among women and men 20-24 by levels of education, 1993-1998*



* Excludes those who are still in school

Figure 2.6
Percent married by age, women and men, 1989-1998



Contraceptive use, pregnancy and childbearing

There was a significant rise in the use of modern contraceptives among sexually active young people over the 1990s (Figure 2.7). Around 10% of all sexually active women in their teens or early 20s were using modern contraceptives in 1989. That rose to 15% in 1993 and by 1998 it stood at 19% (Table A5). In the first two surveys, women in their early 20s were three times as likely as women in their teens to be using contraceptives. By the third survey the gap had narrowed somewhat.

There was little difference in contraceptive use among married and single women in the early 1990s. In 1998, there was a considerable gap. Just 16% of single sexually active women were using modern contraceptives, compared with 21% of married women ($p = 0.004$).
In multivariate analysis on contraceptive use among sexually active women, women in urban areas were significantly more likely to be currently using modern contraceptives than rural women and women with some secondary education were more likely to protect themselves against pregnancy than those with primary education or less. Contraceptive use also rose with age (all $p < 0.001$).

While the overall rise in contraceptive use is broadly encouraging, it appears that over four in every five young women having sex before marriage in Kenya continue to expose themselves to the risk of pregnancy.

Reported use of modern contraceptives among sexually active single men (defined as ever had sex in the last year) was much higher, at 44% of men 15-24 in 1998. It is not unusual that there is some discrepancy between male and female reports. First, incorrect reporting may differ, with women more likely to underreport contraceptive use and men more likely to over report. Secondly, men may have more partners than women and may use contraception only with some of those partners. Third, men may be more likely to have sex with paid partners with whom condom use may be higher. In 1998, 23% of men who used modern contraceptives reported paying for sex, compared with 17% of men who had never used modern contraceptives (data not shown).

Low contraceptive use among sexually active people has obvious consequences: the risk of pregnancy as well as of sexually transmitted infections and HIV is high. The rise in current contraceptive use among sexually active women is reflected in a slight fall in fertility over time, but overall pregnancy rates remain very high. A fifth of all teenagers had been pregnant at all survey rounds, and among women in their early 20s the rate rose over three-quarters. High proportions of these pregnancies have occurred in unmarried women. Indeed among teenagers there were more pregnancies outside marriage than within it, as Figure 2.8 shows.

Even among women in their early 20s, close to one-third of all pregnancies were among the unmarried at the start of the 1990s, although the proportion has fallen over time (Figure 2.8). The data shown here almost certainly underestimate premarital pregnancy because women who got married during their first pregnancy (and perhaps as a consequence of it) are not reflected in the figures for premarital pregnancy.

If women who are not sexually active are excluded, the pregnancy rate is, as expected, far higher. Among sexually active single women, over a quarter said they had been pregnant at least once at all survey rounds, with rates predictably much higher among women in their early 20s than among teenagers.[4] Single, sexually active women in rural areas were more likely to have been pregnant than those in urban areas. Pregnancy among unmarried sexually active women diminished over time, from 50% in 1989 to 39% nine years later.

Population mobility

Population mobility and urbanisation are difficult to gauge from cross-sectional surveys, because survey samples are stratified according to current place of residence. Questions are asked about how long respondents have lived in their current location, which provides a rough idea of levels of population mobility. In this analysis, a "migrant" is defined as someone who has lived in his or her current location for less than five years.

There were few differences in migration between 1989 and 1993, with about 29% and 23%, respectively of young women being relatively new to their locales in both surveys (Table A6). But there was a big leap in mobility for women over the mid 1990s. By 1998, 38% of young women had recently moved from another area. The leap was greatest among women in their early 20s. Forty-seven percent of these women were migrants in 1998, compared with just 26% five years earlier. As Figure 2.9 shows, a similar rise was not seen for men, with around a quarter of 20- to 24-year-old men having been less than five years in their current location in both surveys.[5]

[4] Data for 1998 include pregnancies that were terminated. This question was not included in earlier surveys.
[5] It is not clear why these differences in migration between the sexes exist. They may be related to politically inspired violence before the 1997 elections, which led to widespread population movement in rural areas. The ratio of women to men in rural areas is higher than in urban areas, so it is to be expected that displacement of rural populations would lead to disproportionately higher "migration" rates among women.

Figure 2.7
Use of modern contraception among single sexually active women and men, 1989-1998

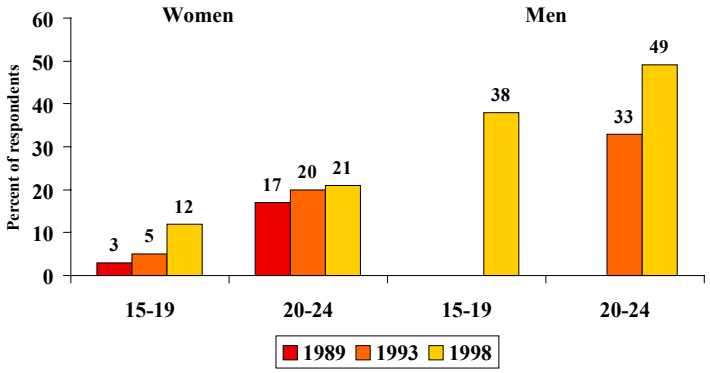


Figure 2.8
Pregnancy by age group and marital status, women, 1989-1998

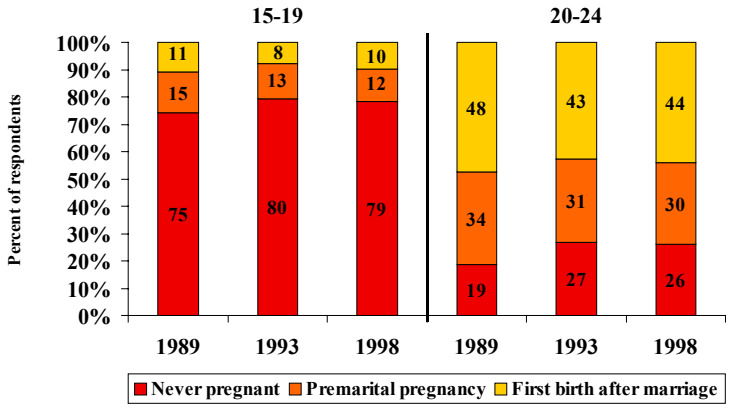
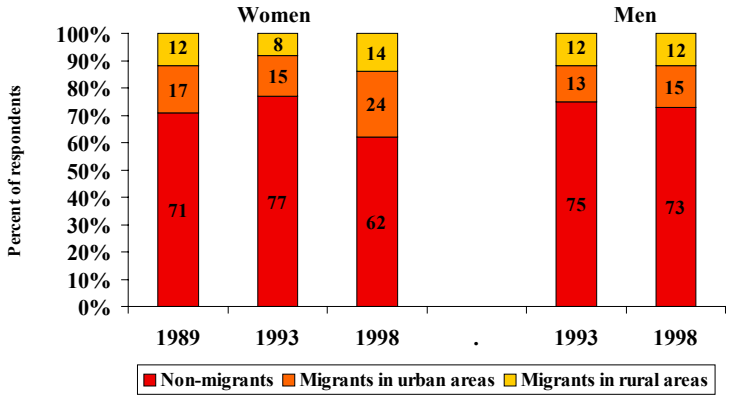


Figure 2.9
Mobility: lived in present location less than five years, women (15-24) and men (20-24), 1989-1998



3. HIV-related knowledge

Knowledge of AIDS in the most general sense has been extraordinarily high among young people in Kenya for over a decade. The earliest national survey to ask about AIDS was the Global Programme on AIDS (GPA) survey of 1990. Already, 89% of both men and women aged between 15 and 24 had heard of AIDS, with no differences between urban and rural areas. Subsequent DHS surveys found virtually universal rates of general awareness of AIDS in all sectors of the population aged under 25. Age and sex breakdowns of these and all other indicators given in this report are summarised in the appendices.

There can be a large gap, however, between knowing the existence of AIDS and knowing the details of how it is spread and – more importantly – how it can be avoided. In the GPA survey, there was a massive fall-off between those who knew about AIDS and those who could, without being prompted, name at least one valid way of avoiding it.[6] Overall, about a third of young people could volunteer a valid way of protecting themselves against HIV. Ignorance about effective prevention was spread roughly evenly across age groups and between the sexes in both urban and rural areas. People with secondary education were more likely to know about effective prevention than people with completed primary education or less. Controlling for age, sex and schooling, young people in rural areas were actually more likely to volunteer a correct way of protecting themselves than those in urban areas (odds ratio 1.7, $p<0.001$).

Figure 3.1 illustrates some interesting trends in knowledge among young women in Kenya in the 1990s. In terms of the proportion of young women able to name a way of protecting themselves against HIV, the balance tipped away from rural areas and towards urban areas, and this gap increased over time. A finding just as striking is that education, which had moderate effect on knowledge at the start of the decade, rapidly became a positive force, with women with some secondary education far more likely to know how to protect themselves against HIV than women with only primary education. Since many in this age group are still in school and older girls are more likely to be in secondary school, it is possible that age plays a role, too. However the effect of education persists strongly in multivariate analysis, even when age and residence are controlled for ($p< 0.001$).

The proportion of 15- to 24-year-old women who could volunteer a correct way of protecting themselves against HIV dropped from 72% in 1993 to 67% in 1998. The fall was statistically significant ($p = 0.0001$), and occurred in both age groups and at all educational levels. The wording of the survey questions was virtually unchanged in both surveys, and there is no obvious explanation for this fall in protective knowledge.

Among men, as Figure 3.2 shows, knowledge also rose dramatically in the early 1990s and to levels that were ultimately slightly higher than those recorded in women.[7] However, unlike women, men's level of knowledge did not then fall back again. There were no significant differences in knowledge by age or residence. As with women, education made a significant difference to prevention knowledge, although this was nowhere near as marked among men as

[6] In general, abstaining from sex, sticking to one faithful partner, and consistently using condoms are considered valid responses in this context. However different surveys use different definitions, and unprompted responses may be coded differently by survey staff. In the GPA survey, "avoiding sex with strangers" and condom use were considered acceptable ways of avoiding AIDS. There was no code for abstinence.

[7] Data for 20- to 24-year-old men are shown because they are available for all three survey years. In 1990 and 1998, there are no discernable differences in knowledge between teenage men and those in their 20s.

among women. Differences in knowledge by educational status persisted even when age and urban/rural residence were taken into account.

The value of correct knowledge about HIV transmission can be undermined if people also have incorrect beliefs, since these may also influence their behaviour. For example if a person knows that he can use a condom to avoid contracting HIV in sex with an infected person, but does not know that infected people can look perfectly healthy, he may not use a condom with healthy looking partners who are in fact infected. In the GPA surveys of 1990, more than four out of five young people (84%) thought that if someone looked healthy, they couldn't be infected with HIV. As Figure 3.3 indicates, the percentage of young women believing that healthy-looking people could not be infected with HIV plunged over the next three years, and remained low throughout the late 1990s. The same pattern was observed for men (not shown). By 1998, three-quarters of young women and four-fifths of young men understood the "healthy carrier" concept. Ignorance was more or less universally spread across demographic groups at the start of the decade. It diminished selectively, so that by the end of the decade people in their 20s and those with secondary education were less likely to believe that healthy-looking people could not have HIV ($p<0.001$ for both sexes). Women in urban areas were also more likely to know of the healthy carrier concept than those in rural areas, but there was no such difference among men, after age and education were controlled for.

Comparable data for other common misconceptions – that HIV could be transmitted by kissing, and that it could be spread through mosquito bites – are not available for 1990. A sharp fall in these misconceptions was, however, registered between 1993 and 1998 (Tables B1 and B2). The sharp drop between 1993 and 1998 however is likely to be associated with changes in the way the question was asked. In 1993 questions on misperceptions were prompted, while in 1998 misconceptions could only be listed as part of a question with spontaneous responses on modes of transmission.

Figures 3.4a and 3.4b gives an overview of changes in HIV-related knowledge among young people in Kenya over the 1990s. AIDS was virtually universally known from the start of the decade, and there have been substantial improvements in knowledge at a more detailed level. By the end of the 1990s, nearly eight young women out of 10 had no major misconceptions about HIV and also knew that a healthy-looking person could be infected with the virus. Eighty percent of young men had no major misconceptions about HIV in 1998. Fewer women than men – just two-thirds of the men and nearly half of the women – could both name a correct way to prevent HIV and refute major misconceptions (data not shown). However, even at these advanced levels of knowledge, fewer than 5% of all young women and fewer than 3% of young men spontaneously volunteered all three correct ways of preventing HIV transmission currently promoted by AIDS-prevention programmes in Kenya.

Figure 3.1
Women 15-19 who can volunteer a correct way of protecting against HIV, 1990-1998*

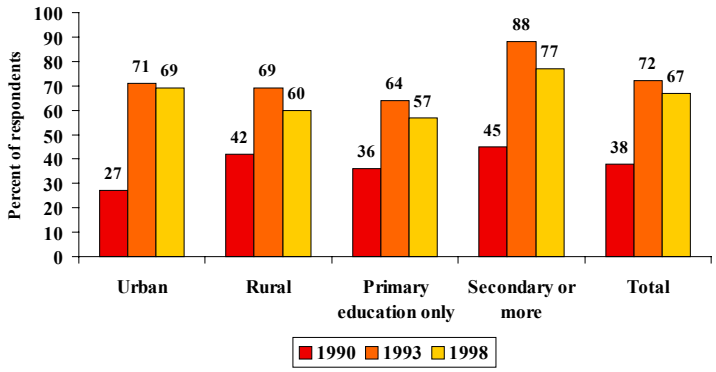


Figure 3.2
Men 20-24 who can volunteer a correct way of protecting against HIV, 1990-1998*

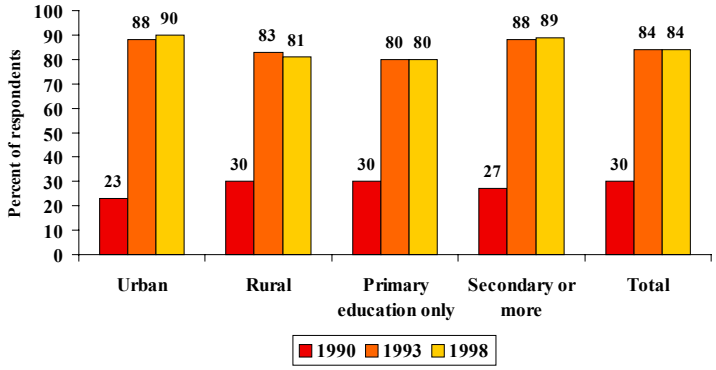
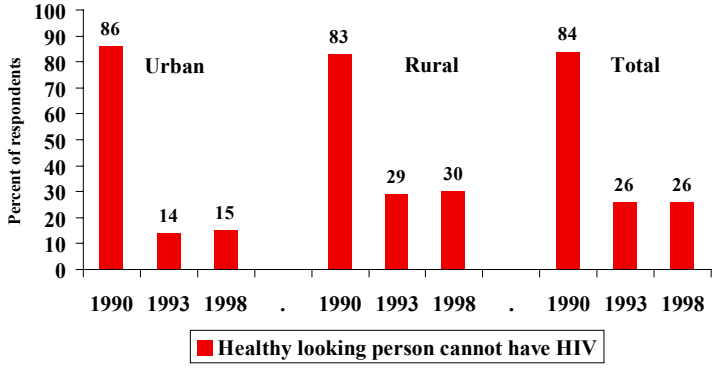


Figure 3.3
Common misconceptions about HIV transmission among women 15-24, 1990-1998*



* The 1990 data are from the GPA survey, which used wording and questioning sequences that varied from the later DHS data. Therefore, results comparing trends in knowledge and behaviour should be interpreted with caution.

Figure 3.4a
Knowledge about HIV transmission and prevention, women 15-24, 1990-1998*

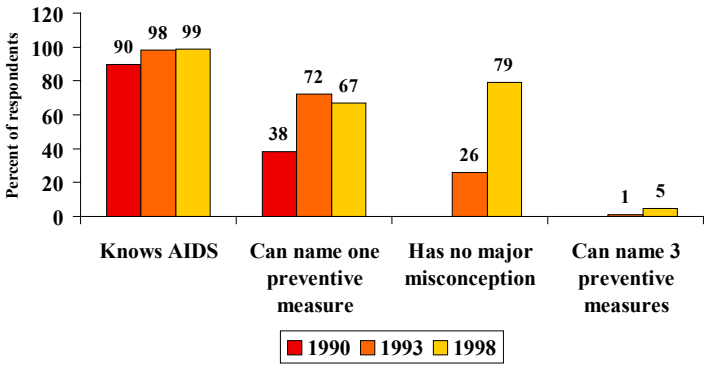
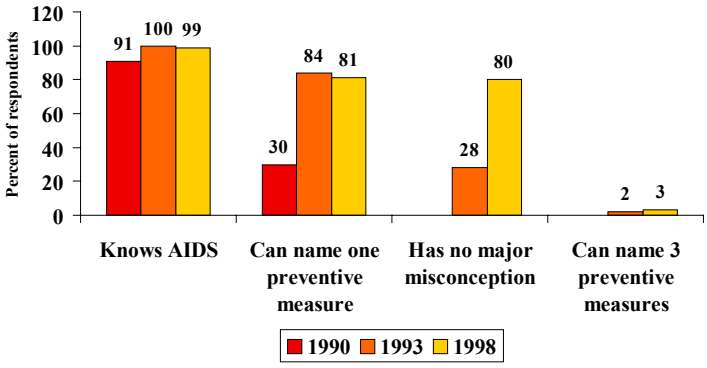


Figure 3.4b
Knowledge about HIV transmission and prevention, men 15-24, 1990-1998**



+ 1993 men 20-24 only

4. Age at first sex and premarital sex

The earlier a person starts having sex, the sooner they are likely to be exposed to the risk of HIV infection. This is especially true of young women, whose immature vaginal tracts may be particularly susceptible to abrasion and other trauma which makes it easier for HIV to find its way into the body during sex with an infected partner. The prominence given to messages promoting abstinence in HIV-prevention campaigns rests largely on the political acceptability of the message in predominantly Christian Kenya. However there is no doubt that delay of first sex would contribute to lower infection rates in young people, and especially among young women. So is there any evidence that campaigns promoting abstinence are having any effect?

This question can best be answered by looking at trends in reported age at first sex among young people over the decade for which data are available. There are several ways of looking at these trends. One is to look at the proportion of people who say they have already had sex at a given age, say by age 15 or age 18. The other is to use demographic methods, described below, to investigate the proportion of people who become sexually active at each age.

In the GPA survey of 1990, 26% of young women aged 15-24 had sex by their fifteenth birthday, and 64% of those who were 18 or older said they had sex by their eighteenth birthday. Fewer boys than girls stayed virgins through their teens in this survey, with 39% of young men reporting having lost their virginity by the time they turned 15, and almost three-fourths (73%) were no longer virgins when they turned 18. As Figure 4.1 shows, the 1990 GPA survey was slightly atypical in that rates of sexual activity recorded were slightly lower than in the larger and perhaps more consistent DHS surveys.

The DHS surveys recorded a very small but statistically significant drop between 1989 and 1998 in the proportions of women who were sexually active by age 15, while the proportion of women sexually activity by age 18 remained virtually unchanged between 1989 and 1998. The proportion of 15- to 24-year-old women who were not virgins by age 15 dipped by just under one percentage point from 30.1% in 1989 to 28.8% in 1998 ($p = 0.012$) (Figure 4.1). Among women 18-24, about 70% of women had already had sex by age 18 in 1989 and the figure was about 69% nine years later. There were no significant differences in sexual initiation between urban and rural areas after controlling for other factors. There was, however, a striking difference in sexual activity by educational level, with women with some secondary education staying virgins far longer (Figure 4.2).

Data for men are less comparable than for women, but multivariate analysis shows that the slight rise in early sexual activity shown in Figure 4.1 is statistically significant ($p<0.001$). By 1998, 44% of men aged 15-24 said they had first had sex by the time they turned 15, up from 39% eight years earlier. Seventy-seven percent of those aged 18-24 were sexually active before their eighteenth birthday in the most recent survey, up from 73% in 1990. As with women, sexual activity was broadly similar in urban and rural areas. A striking difference between men and women, illustrated in Figure 4.2, was that among men there was no association between educational level and sexual debut.

The second method of looking at trends in sexual debut allows for a better understanding of the patterns of early sexual activity. A detailed description of the method is available elsewhere.[8]

[8] Zaba B, Boerma JT, Pisani E. Estimation of levels and trends in age at first sex from surveys using survival analysis. MEASURE Evaluation Working Paper, No. 51, March 2002.

Briefly, people aged 15-24 are asked whether they have ever had sex, and if so how old they were when they first had sex. A "life table" approach – a common technique in demography – is used to construct a cumulative curve of age at first sex. Almost all respondents are virgins at age 10. They appear in the "first sex" curve at the age at which they say they first had sex. If they are still virgins at the time of the survey, they drop out of the population considered "at risk" for having sex at whatever age they are at that time. This method allows us to calculate fairly accurately a median value of reported first sex – in other words, to calculate the age by which half of the young men or women in a population have had sex.

The median age at first intercourse, derived from the life-table, has remained very similar in the three surveys. The median based on the reports of women 15-19 was 17.5 years in 1989 and 17.7 years in 1993 and 1998 (Figure 4.3). Among women 20-24 the median was somewhat earlier and there was an increase from 16.5 years in 1989 to 17.1 years in 1998.

There was no difference in patterns of sexual debut reported by men in their early 20s in 1993 and 1998: 16.2 and 16.0 years respectively. In 1998, the median age at first sex among men 15-19 was 16.5 years. There were only minor differences in patterns of first sex among men in rural and urban areas.

A comparison of data from the same birth cohort encountered in successive surveys (e.g. those aged 15-19 in an earlier survey and 20-24 in a survey five years later) allows an assessment of the quality of reporting to be done. Changes in measures of age at first sex in the same birth cohort between the two surveys will be associated with recall bias, sampling error, survivor selection or a combination of these factors. We would normally not expect mortality or external migration to be so strongly associated with age at first sex that selection effects alter the structure of the birth cohort – though AIDS mortality differentially affecting those who became sexually active early might challenge this assumption.

Cohort comparisons are particularly important for the evaluation of the reporting bias associated with initiation of sexual activity. Teenagers may be reluctant to report sexual activity to an older survey interviewer, while older respondents may be less unwilling to report past teenage sexual activity once they are in their twenties. This would produce an impression of increasing age at first sex when comparing reports of different age groups collected in a single cross-sectional survey. The reporting bias may also be in the opposite direction, if married women displayed a strong reluctance to report premarital sexual activity.

Although DHS surveys aim to produce a nationally representative sample, they do not re-visit the same women from one round to the next, so we may also be faced with problems due to changes in the composition of the sample between rounds. Later age at first sex is very strongly associated with higher educational attainment and somewhat less strongly with urban residence, so changes in the composition of the sample with respect to these two characteristics may produce spurious impressions of change over time.

To obtain estimates of age at first sex by birth cohort the data from the successive surveys were pooled. Women born during 1970-74 were about 15-19 in 1989, 20-24 in 1993 and 25-29 in 1998, but the estimate of median age at first sex should not vary much over time. Figure 4.4 shows that both within the 1969-73 and 1974-78 birth cohorts the age at first sex is lower when based on reports obtained once the women are in their twenties compared to when the women were surveyed as teenagers. The reason for the difference – which persists strongly even after taking into account differences in schooling and urban/rural residence – is not clear. However the most likely explanation is that since early sex is disapproved of by many older adults (even

though it is a norm), teenagers are somewhat reluctant to confess to being sexually active. By the time they are in their early 20s, an age group where almost everyone has had sex, women are more likely to tell the truth about their first sexual experiences.

Figure 4.1
Percent who had sex by their 15th and 18th birthday, 1989-1998

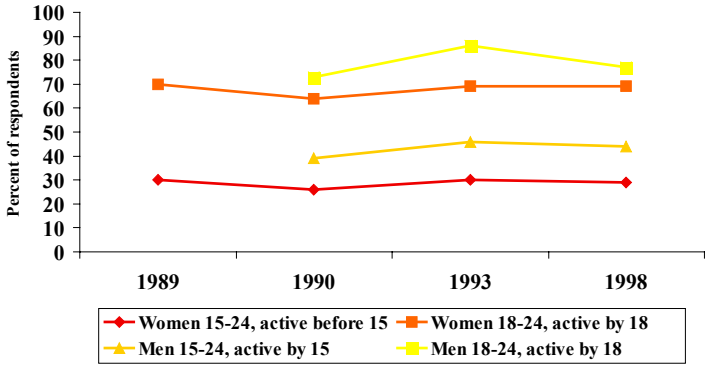
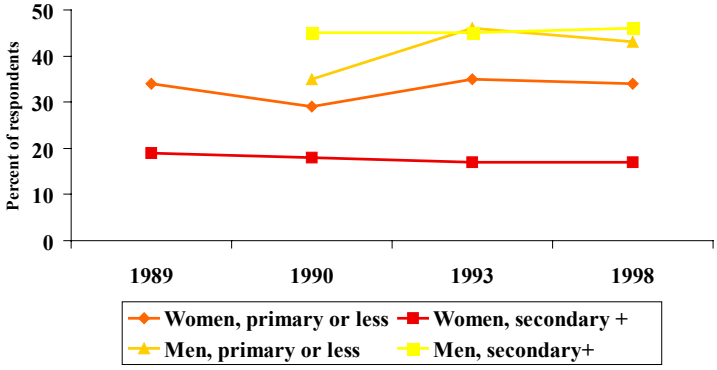


Figure 4.2
Percent of 15- to 24-year-olds who had initiated sex by age 15, by level of education, 1989-1998*



**In 1993 data for men are for 20- to 24-year-olds only*

Figure 4.3
Median age at first sex (in years) by survey among women, 1989-1998

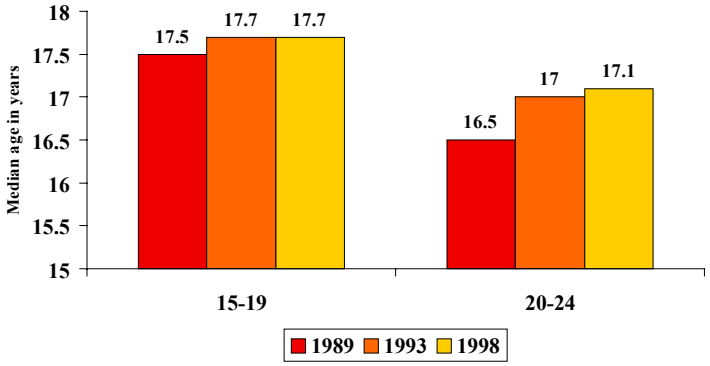
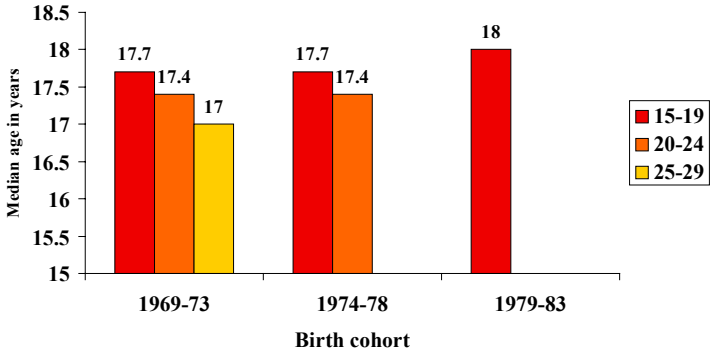


Figure 4.4
Median age at first sex (in years) by birth cohort and age at reporting time among women, 1989-1998



Premarital sex

Clearly, high proportions of young people are having sex at early ages. In Kenya, HIV-prevention programmes do not seek to discourage early sex so much as they seek to discourage early sex prior to marriage. In some parts of Kenya, much of the early sexual activity recorded above may have taken place within marriage, making it of less concern to HIV-prevention programmers.

Figure 4.5 presents the trends in median age at marriage, based on a similar survival analysis technique as used for age at first sex, and including only respondents 15-24. The median age of marriage among young women increased from 20.1 in 1988-1989 to 20.8 years in 1993 and remained at about the same level in 1998. By age 18 about one-forth of women were married throughout the nineties. Men married much later than women and only a quarter of men were married by age 22.8 in 1993 and by age 23.3 in 1998. The median was over 25 years.

What proportion are having sex before marriage? The gap between the sexual activity and the marriage curves is shown in Figure 4.6 and 4.7. Among women, the gap appeared to be smallest in 1989, especially at later ages (median difference 2.8 years). The difference between the median

age at first sex and the median age at first marriage grew to 3.2 in 1993 and was 3.0 years in 1998.
Among men, the gap was far wider, as Figure 4.7 shows. In the early twenties only a minority of men were married, while virtually all were already sexually active. Norms of late marriage among men mean that men are having premarital sex for many years before marriage.

About one-third of unmarried women aged 15-24 had had premarital sex at all survey rounds, and among young men the proportion was much higher (Figure 4.8). In 1989, 33% of single women were sexually active, ten years later 32%. In 1998, 56% of unmarried men 15-24 were sexually active (had sex in the last year). Sexual activity among unmarried men 20-24 declined from 86% in 1993 to 75% in 1998.

There was significant difference in levels of premarital sex in the last year between urban and rural areas in 1989 (p=0.0001) for women, and the difference persisted in 1993 but was no longer significant (p=0.36). By 1998 teenagers in urban areas again became significantly more likely to say they had had sex before marriage than those in rural areas (p = 0.0003). The bivariate results for educational level reveal no changes in premarital sex by educational level over time. However, premarital sex by educational level became significant in 1989 and 1998 in a multivariate analysis that controlled for the effect of residence and age (p=0.0003). Residence made no difference to the likelihood of having premarital sex for men. However after controlling for residence and education, men's premarital sexual activity was seen to rise significantly over time. In 1998, men with some secondary education were significantly more likely to have premarital sex than men with only primary education, even after controlling for differences in age and residence (p=0.03).

Figure 4.5
Median age at first marriage among women, with first and third quartile, 1989-1998

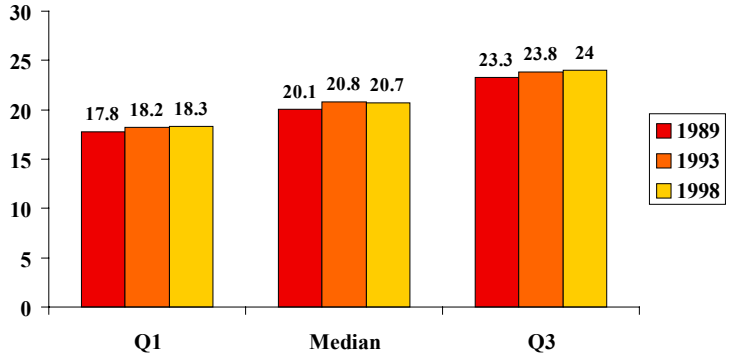


Figure 4.6
Age at first sex and first marriage by single years and survey among women 15-24, 1993 and 1998

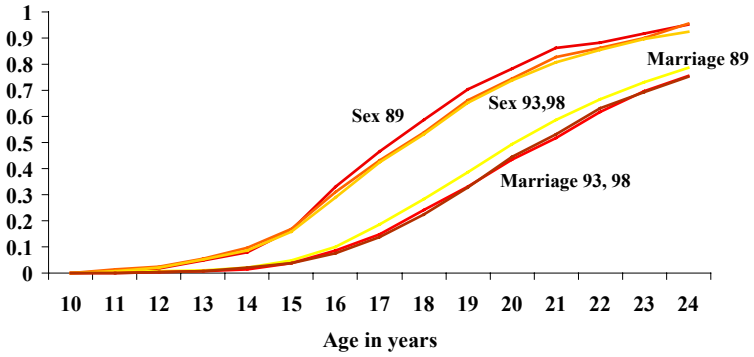


Figure 4.7
Age at first sex and first marriage by single years survey among men 15-24, 1993 and 1998

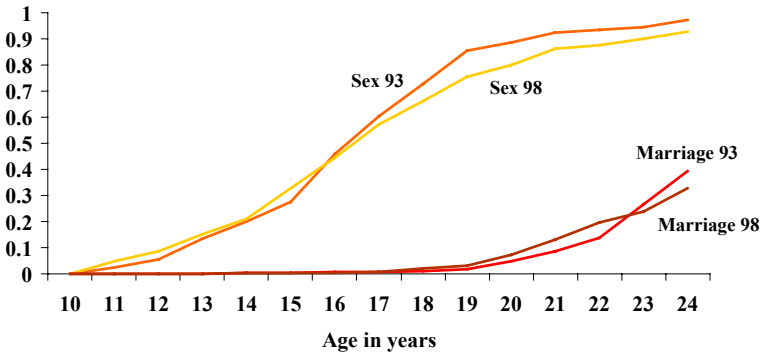
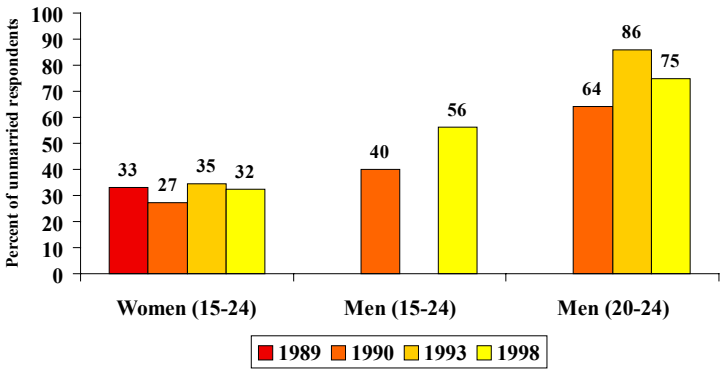


Figure 4.8
Premarital sex in the last year among unmarried women and men 15-24, 1989-1998 (percents)



Sexual behaviour among adolescents in Kisumu

In Kisumu, at age 14.5 years 25% of both men and women had already had their first sexual experience (Ferry et al., 2001). Before age 17, half of men and women had sex (median 16.9 years for women and 16.2 years for men). The median age at first marriage was about three years after their first sexual experience for women (19.6 years). For men there is a much longer period of premarital sexual activity as the median age at first marriage for men in Kisumu was 25.5 years.

Eight out of 10 men under 20 years of age said they had non-marital partners in the past 12 months and almost all of those partners were women under 20 years (Glynn et al., 2001). At ages 20-24, 71% of men reported a non-marital partner in the last year, and two-thirds of those partners were teenage women.

Teenage women themselves less frequently reported a non-marital partner in the last year (45%), and 22% of those women 15-19 had at least one partner aged 25 or older. At ages 20-24, 20% of women reported a non-marital partner and 75% of those were 25 or older.

Validity of self-reported sexual behaviour data among adolescents

Self-reported sexual behaviour data are subject to a range of biases. An assessment of such data in a household survey in Kisumu showed that it was not uncommon for sexually active adolescent girls and boys to deny that they ever had sexual intercourse (Buve et al., 2001c). Among men 15-24 who said they had never had sex, none had HIV infection, but 7.5% had another STI. Among women 15-24 who were not sexually active, 10.8% had HIV infection, 6.2% had HIV infection and another STI, and 11.3% had any STI. These data suggest that underreporting of sexual activity is common, especially among adolescent women.

The same study also compared the numbers of partnerships reported by men and women. In the age group 15-19, men were nearly four times more likely to report sexual partners than young women.

The Kisumu study data can obviously only assess part of the reporting biases. It appears that underreporting of sexual activity and sexual partners is common among young women, while it cannot be excluded that there is some overreporting by young men**.**

5. Sex with multiple partners

A premarital norm

So far, the evidence shows that many young Kenyans are sexually active before marriage, and that there was scant reduction in premarital sex despite any HIV-prevention efforts in place in the 1990s. Let us examine, then, the success among unmarried people of the second major prevention message aired in Kenya: "Stick to one partner."

There are various ways of looking at this. One is to ask about lifetime sex partners, a question that was only used in 1993. About half of unmarried sexually active (ever had sex) teenage women had slept with two or more men, as had over two-thirds of single women in their early 20s (Figure 5.1 and Table D1). There were no differences between women in urban and rural areas, but those with some secondary education were less likely to have had multiple partners than women who had only primary schooling, after controlling for residence and age. Among single, sexually active (ever had sex) men in their early 20s, multiple partnership approached the universal, so it was not surprising that there were no significant differences between different levels of background characteristics.

Information about the number of lifetime partners can be difficult to interpret, both because it is hard to control for the length of time each person has been sexually active and because a cumulative lifetime measure will be slow to reflect any recent changes in behaviour. Surveys of sexual behaviour therefore also tend to ask about sexual activity over a defined period in the recent past – most commonly one year. Consensus that one year is the most robust reference period has developed only recently, in the case of Kenya. The 1993 DHS survey asked about sexual partnerships over the previous six months. Therefore the answers given in 1993 and 1998 are only partly comparable.

Questions on sexual partnerships in the last year were first asked in the GPA survey of 1990. Nearly one-fifth of unmarried women who had sex in the last year had sex with two or more men in that period, and the rate among men was over twice that high. In 1993, questions were asked about sex in the last six months, and reported rates of multiple partnerships were somewhat lower than those for 1990. Some 19% of single women aged 15-24 who had had sex in the last six months had sex with more than one man in that period. Women continued to report fewer multiple partnerships in 1998: just 13% said they had sex with two or more men recently, even though the reference period was once again set at 12 months.

Overall, the data shown in Figure 5.2 suggest a drop in multiple partnerships among young, sexually active women from 1993 to 1998. In multivariate analysis, the downward trend over time is statistically significant ($p = 0.002$). Between 1993 and 1998, women in their teens were no less likely to report multiple partners than women in their 20s, and multiple partnership was similar among rural and urban women (Table D1). Women with some secondary education were also less likely to have multiple partners than those with only primary education, and this distinction became more pronounced over time. Being in school was itself protective by 1998, although this was not the case in 1993, as Figure 5.3 shows.

Figure 5.1
More than one lifetime partner among sexually active singles aged 20-24 by education and residence, 1993

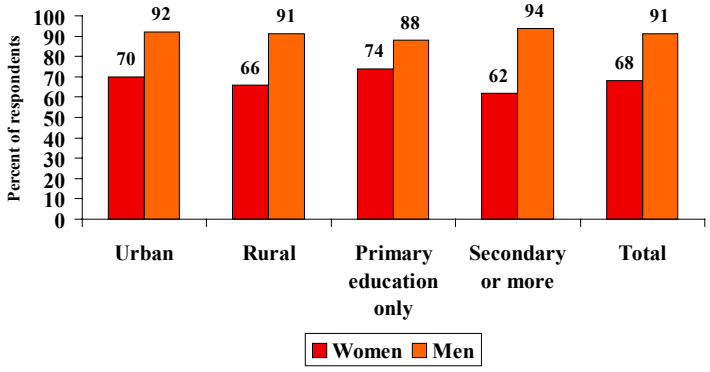
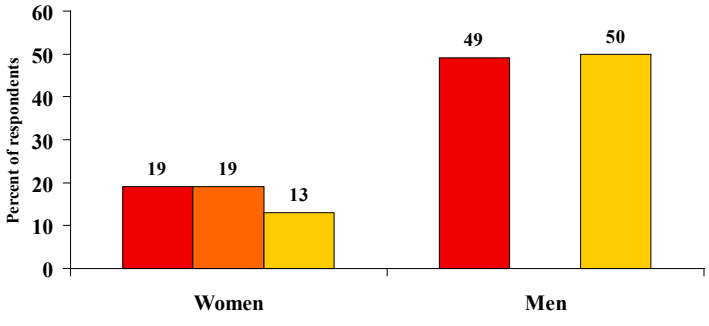
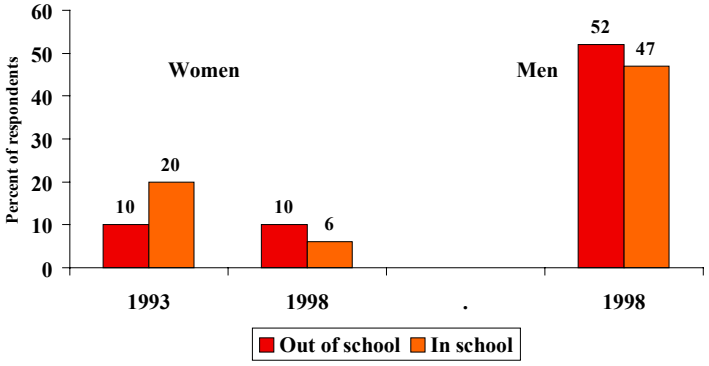


Figure 5.2
More than one partner in the last year among single men and women 15-24, 1990-1998*



*1993: multiple partnerships in the last 6 months

Figure 5.3
More than one partner in the last year among sexually active teenagers by schooling status, 1993-1998



Among men, no equivalent fall appears to have taken place over time. Single men aged 15-24 were just as likely to report multiple partnerships in 1998 as they were in the 1990. Around 49% and 50% of single men who had sex in the last year reported sex with two or more women in 1990 and 1998, respectively (Table D2). Single men with multiple partners resembled single women, with respect to age group in those reporting multiple partnerships, but had significantly lower rates of multiple partnership among those with some secondary education ($p = 0.001$). However, this did not hold for teenage boys, as those in school were not significantly less likely to report multiple partnerships than those out of school, similar to the finding for teenage girls.

Sex with multiple partners among the married: a rarity for young women

Married women were far less likely than single women to report multiple partners in the preceding year or six months. In the 1990 survey only six women – fewer than 5% of married women in the study – reported more than one partner in the past year.[9] In 1993, fewer than 3% of married women said they had sex with anyone other than their husband in the last six months and that rate was not significantly different five years later (Table D1). There were no differences by residence or education, but married women in their teens were significantly more likely than women in their 20s to report more than one recent partner. This may be because teenage women are more likely to be reporting partners they had before they were married: almost two-thirds of the married teenagers reporting multiple partnerships had been married for less than a year, compared with a fifth of the women in their early 20s.

The number of married men aged under 25 was small in all surveys. Those that were married were, however, consistently around 10 times as likely as married women to report sex with more than one partner in the last year. Numbers were too small for analysis by demographic characteristics.

Mutual monogamy: an incomplete message

As shown in Figure 5.1, most young Kenyans who have ever had sex have had sex with more than one person in their lives. And it appears that multiple partnership, while having fallen slightly among young women, remains common, especially among the majority of those under 25 who are still single.

This implies that the "stick to one partner" message seems to have failed the vast majority of young men in Kenya and a substantial proportion of young women. This may be because people have a tendency to think in the short term, and to interpret the message not as "stick to one partner your whole life," but as "stick to one partner at a time." Evidence to support this explanation comes from survey questions asking what, if anything, the respondents have done to protect themselves against HIV infection since the time they heard of the disease. Fully two-thirds of the sexually active young men asked this question in 1998 said that they were sticking to one partner or reducing their partner numbers to avoid AIDS. Of those, 45% also reported multiple partners in the last year. Even among those who volunteered specifically that they were being faithful to one partner, 29% reported multiple partners in the last 12 months. Thirteen percent of sexually active single women recorded a similar disconnect, saying they were being monogamous to avoid AIDS while actually having sex with more than one man in the last 12 months.

One further consideration is worth mentioning. To be effective in a high HIV-prevalence environment, the "stick to one partner" message has to be understood as "stick to one partner who you know is HIV-negative and who has no other partners." Since rates of HIV testing among

[9] Because the numbers in this survey are so small, it has been excluded from the logistic regression.

young people are low and rates of multiple partnerships are high, the probability that both these conditions will be fulfilled is not high. Thirteen percent of young women and 10% of young men said in 1998 that they had ever been tested for HIV. Given the poor availability of voluntary testing services in Kenya at the time of the survey, this proportion seems high. Some respondents may believe that they have been tested anonymously, for example in the context of sentinel HIV surveillance among pregnant women. Respondents were not asked if they learned their results, if they shared their results with their sex partners, or if they knew their sex partner's sero-status.

Gender issues in primary schools

In a study in 36 primary schools in rural areas of Nyeri, Nakuru, and Kilifi district it was observed that there are not many incentives for women to stay in school and delay marriage (Mensch, Lloyd and Erulkar, 2001). Teachers had lower expectations for adolescent girls than for adolescent boys. Girls were more likely to experience discrimination and negative attitudes than young boys. In addition, girls were less likely to receive encouragement from their teachers and were more likely to experience some form of sexual harassment.

Teachers were not in favour of teaching about sexuality or about methods of contraception and the majority of teachers stated that a girl should be thrown out of school if she becomes pregnant and should not be allowed to continue after she has had the child. Only a small proportion of teachers said a boy should be thrown out of school if he gets a girl pregnant. The study concluded that the school environment was particularly harsh for women and did not counteract the sexual stereotypes that exist in Kenyan society.

6. Condom use

With no evidence of an increase in abstinence or decrease in premarital sex, and with multiple partnerships still common, an increase in condom use among young people is likely critical to slowing the spread of HIV.

Measures of condom use have been rather inconsistent over time. Early surveys enquired simply whether respondents had ever used a condom. This continues to be asked, and changes in this measure among young people can give a broad indication of changing levels of condom use. However in countries such as Kenya where HIV infection is quite common, most HIV-prevention campaigns aim not just for occasional use of condoms, but for consistent use with non-marital partners. The need to measure recent changes and to find some indicator of more consistent use of condoms has led to more sensitive measures of condom use being added over time. In general, it is agreed that condom use at last sex provides a robust measure of trends in consistent condom use in a population, since if consistent use rises, condom use at last sex inevitably rises also.

In 1993, people were asked if they had used a condom with any of the partners they had sex with over the previous three months. This measure is most useful as an indication of recent condom use among single people. In 1998, people were asked whether they had used a condom the last time they had sex with their spouse, and whether they used a condom the last time they had sex with a partner to whom they were not married. This allows us to calculate what proportion of people used a condom the last time they had sex with a non-marital partner. This is now the standard indicator recommended for measuring the success of condom promotion by HIV-prevention programmes. It is an indicator of the frequency and consistency of use in the population.

In 1989, about 4% of sexually active (sex in the last year) single women had ever used a condom (Table E1). There was little difference by age or residence, although women with some secondary education were significantly more likely to have used a condom than women with only primary education. Less than a year later, the GPA survey recorded much higher rates of condom use among young women: 19% of the women aged 15-24 who had sex in the last year said they had used condoms at some time. This difference likely reflects differences in the context of the survey, as well as the smaller sample sizes and poorer data quality of the GPA survey.[10] Data for 1990 are therefore not included in Figure 6.1, which nonetheless shows a dramatic rise in condom use over the 1990s. The rise was greatest among women with some secondary education, as well as among those resident in urban areas. By 1998, 31% of single women who had sex in the last year said they had used condoms at some time – an eight-fold increase in just nine years.

Less information is available for men, but for those 20-24, for whom data can be compared for similar surveys in 1993 and 1998, rises in condom use were also recorded. Because no 1989 data are available for men, Figure 6.2 shows condom use rates for men in their early 20s from the rather different 1990 survey. Even bearing in mind that this survey appeared to record rates of condom use higher than the larger and more standardised DHS surveys, condom use among men rose sharply over the decade. By 1998 it had reached quite high levels. Three-quarters of sexually active single men 20-24 reported having used a condom by 1998, up from one-third eight years earlier.

[10] Whereas DHS surveys cover a whole range of demographic, reproductive and health issues, the GPA surveys focused specifically on HIV, AIDS and risky sexual behaviour. This may have influenced the outcome of the survey.

Indeed by 1998 the proportion of sexually active single men who had at some time used a condom was high across the board, so that differences between urban and rural areas were no longer significant after controlling for age and education. Young people who reported sex with more than one person in the recent past were more likely than those who reported only a single partner to say they had used condoms at some time. This was true of both men and women at all survey rounds (data not shown).

To what extent is "ever-use" of condoms related to "condom use at last sex," which is the best measure of consistency of condom use at a population level? The relationship is not very close, according to data collected only in 1998. Just under half (49%) of the young single women and about 60% of young single men who had ever used a condom said they used one the last time they had sex. This must lead us to conclude that consistent condom use in non-marital relationships is far from a norm even among those who sometimes use condoms (Tables E1 and E2).

The data for Kenya only allow us to examine the most standard indicator of risky sexual behaviour – condom use at last sex with a non-marital partner – for 1998 (Figures 6.3 and 6.4). Overall, 44% of the single men aged 15-24 who had had sex in the last year reported using a condom the last time they had sex – 38% of teenagers, and 50% of men in their early 20s. There was no significant difference between urban and rural areas, but as Figure 6.4 shows, single men with some secondary education were substantially more likely to have used a condom the last time they had sex than men who only had primary schooling, even after controlling for differences in age and residence ($p<0.001$). Last-time condom use was not appreciably different among young men who said they had had sex with two or more partners (43%) in the last year than among all men with a partner in the last year (44%). Of the small number of married men with extramarital partners, close to half (46%) used a condom the last time they had sex outside marriage.

Among women, reported condom usage rates at last non-marital sex were predictably much lower. Some 15% of 15- to 24-year-old women who were single and had had sex in the last year said they used a condom the last time they had sex, and there was, surprisingly, no appreciable difference between teenagers and those in their 20s. Women in urban areas were more likely to have used a condom at last sex than women in rural areas, and the difference was significant after controlling for differences in education ($p= 0.05$). Condom use did not differ as much by educational level for single, sexually active women as it did for men, but the difference was still significant ($p= 0.02$). Single women who reported more than one partner in the last year were not any more likely than women with just one partner to have used a condom the last time they had sex. Twenty percent of the 23 married women who reported extramarital sex in the last year said they had used a condom the last time they had sex with someone other than their husband.

Given the differences between data sets, it is difficult to construct exactly parallel measures of overall risk behaviour over time. In particular, it is not possible to capture all risk behaviour, because no survey has a reliable measure of consistency of condom use. The data shown in Tables 6.1 and 6.2, which record the proportion of all respondents reporting at least some unprotected sex outside marriage in the recent past should, therefore, be taken as a minimum.

There has been a small but statistically significant fall in overall levels of reported risk behaviour over the 1990s among both men and women. Bear in mind, though, that the 1990 survey is not directly comparable with the other surveys, and trends may therefore be somewhat misleading.

Figure 6.1
Ever use of condom among single sexually active (sex in the last year) women 15-24, 1990-1998

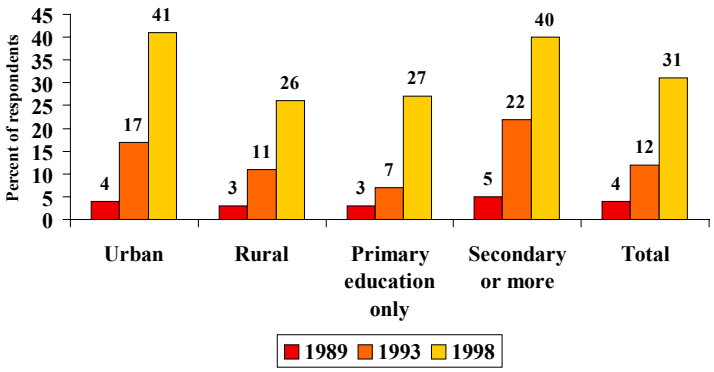


Figure 6.2
Ever use of condom among single sexually active (sex in the last year) men 20-24, 1990-1998

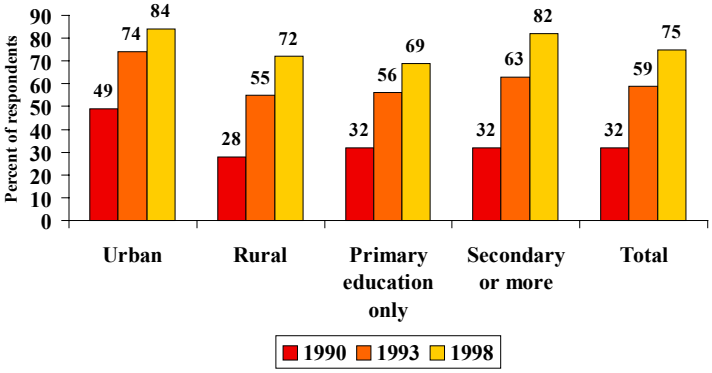


Figure 6.3
Use of condom at last sex among single sexually active women, 1998

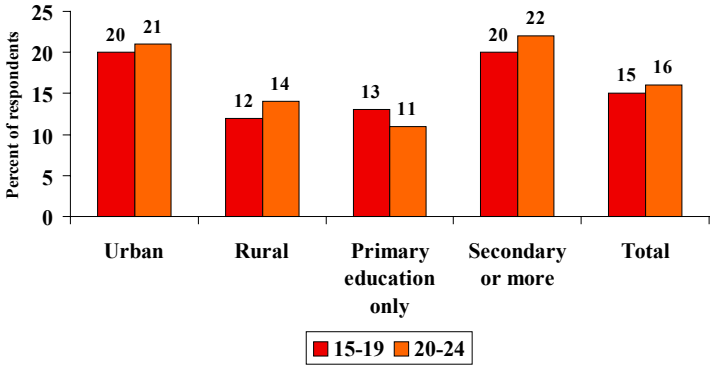
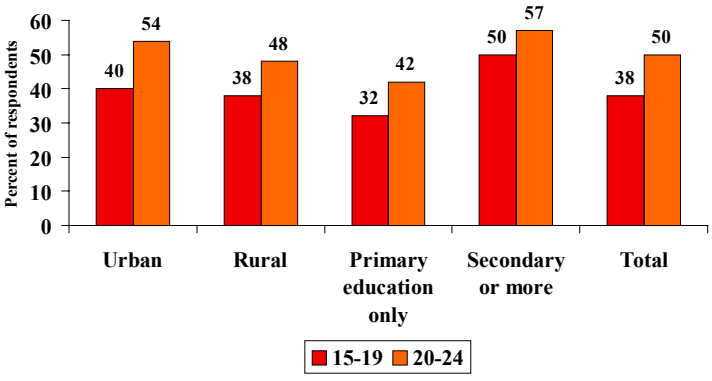


Figure 6.4
Use of condom at last sex among single sexually active men, 1998



Beliefs about Safe Sex and Condoms among Adolescent Boys

Even if adolescent boys may have a fairly high level of knowledge on prevention of unwanted pregnancies and STIs, male norms favouring sexual experience seem to override knowledge of sexual risks (Nzioka, 2001). In focus group discussions with 90 male students aged 15-19 in rural Kenya, it was reported that getting a girl pregnant and/or having a treatable STI is seen as a sign of masculinity among adolescent boys. In addition, boys are more likely to blame girls for unwanted pregnancies and have a tendency to discuss sexual activity with their peers. Boys felt embarrassed about discussing any sort of sexual activity with their parents.

Even with a high level of awareness about the value of wearing a condom, the boys expressed a reluctance to buy condoms where someone knew them or their parents. In addition, some boys doubted the effectiveness of condoms while others did not want to be perceived as someone who needed to wear a condom. In this case, they would be considered promiscuous and possibly be contaminated. The availability of condoms was also questioned either because young boys could not afford to buy them or the supply of condoms was erratic.

Table 6.1: Percentage of young women reporting recent unprotected sex outside marriage, Kenya 1990-1998

	15-19			20-24			15-24		
	1990	1993	1998	1990	1993	1998	1990	1993	1998
Urban	29.0	21.6	17.7	23.8	25.8	14.0	26.3	24.1	15.8
Rural	26.1	22.3	16.9	17.6	18.3	14.1	22.0	20.5	15.7
Primary	28.6	22.7	18.0	16.0	18.7	14.0	21.8	20.9	16.4
Secondary	25.0	20.4	14.2	28.9	22.8	14.0	26.4	21.8	14.1
Total	27.5	22.2	17.1	20.7	20.0	14.0	23.1	21.6	15.7

* Recent is defined as the last six months in 1993, last 12 months in all others.

Table 6.2: Percentage of young men reporting recent unprotected sex outside marriage, Kenya 1990-1998

	15-19			20-24			15-24		
	1990	1993	1998	1990	1993	1998	1990	1993	1998
Urban	21.9	na	10.5	51.6	19.8	9.5	38.7	na	9.9
Rural	34.7	na	16.0	57.3	33.4	18.5	45.3	na	17.0
Primary	30.9	na	16.5	51.7	31.9	19.2	39.3	na	17.5
Secondary	36.6	na	11.4	60.2	28.3	11.5	50.9	na	11.5
Total	32.6	na	15.1	56.0	30.3	15.8	44.1	na	15.4

na: not available

* Recent is defined as the last six months in 1993, last 12 months in all others.

7. The relationship between knowledge and behaviour

This investigation of available information seems to suggest that while correct knowledge about HIV among young Kenyans had reached high levels by the late 1990s and misconceptions had dropped significantly, risk behaviour remained common. In 1998, about 16% of all young women and 15% of all young men aged 15-24 reported risky or unprotected sex in the recent past (Appendix F). It seems, then, that young Kenyans are not translating their knowledge into behaviour.

The relationship between knowledge and behaviour can be examined more closely by comparing what people say they know and what they say they do. Figure 7.1 shows risk behaviour according to whether people volunteer that certain behaviour is risky. The darker bar represents the people who say a behaviour is risky but who engage in it anyway – in other words, those who are not acting on their knowledge. People who mention abstinence and monogamy as protective are more likely to be virgins or to have only one current partner than those who don't volunteer this information. The same is not true for condoms. Sexually active people (sex in the last year) who say condoms protect against HIV are actually more likely to have had recent unprotected sex than people who don't mention condoms as protective at all. But in all cases, it is clear that for a high proportion of those engaging in risk behaviour, ignorance can be no excuse. It is worth noting that risk behaviours mentioned here are mentioned spontaneously. Because people are less likely spontaneously to mention things which do not match their behaviour, it is to be expected that if these responses were prompted (e.g. if people were asked: is abstinence protective against AIDS?) the disconnect between knowledge and behaviour would be greater still.[11]

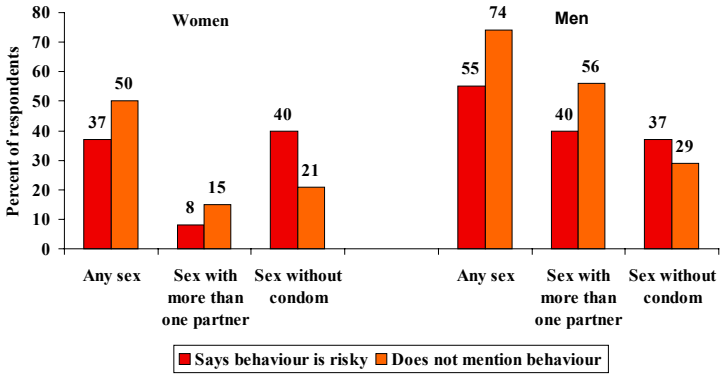
Another indication that people are not engaging in risky sex out of ignorance can be found in answers to a question about an HIV-prevention programme: the social marketing of Trust condoms. Trust brand condoms have been sold at subsidised prices in Kenya for some years now. They have been aggressively marketed specifically to 15- to 24-year-olds as an effective means of protection against HIV. The campaign had by 1998 achieved extraordinary levels of brand recognition among sexually active young people. Overall, nearly nine in 10 Kenyan men aged 15-24 who had ever had sex said they had heard of Trust condoms, with no significant difference between urban and rural areas – a surprising finding since promotion and distribution of Trust centres largely on urban areas. The lack of an urban-rural difference in Trust brand recognition may reflect greater mobility among men than among women, since just 58% of young sexually active women in rural areas had heard of the brand, compared with 81% of women in urban areas (data not shown). Among women, this knowledge of a widely available, cheap and effective protective measure against HIV was not translated into safer behaviour. Women who knew about Trust condoms were just as likely to report recent unprotected sex as women who had never heard of the brand. Among single men, the campaign does seem to have made a difference. Young single men who had not heard of Trust condoms were far more likely to report recent unprotected sex than men who did know the brand (77 vs 45%, $p< 0.001$). Having said that, the fact that 45% of the vast majority of sexually active single men who did know the brand still reported recent unprotected sex demonstrates that much remains to be done.

[11] These data are presented as expressions of risk for ease of interpretation. In fact, they are the inverse of responses to the question, "Is there anything a person can do to avoid getting the virus that causes AIDS?" So if a person mentioned "use condoms" as a protective measure, it is recorded in this interpretation as knowing that not using condoms carries a risk of AIDS.

The disconnect between knowledge and behaviour translates also into a disconnect between behaviour and feeling at risk. As Figure 7.2 shows, seven out of every 10 young men who had recent unprotected sex with a non-marital partner in 1998 thought they were at no or only minimal risk for HIV. More than six out of every 10 women who had had recent unprotected sex with someone they were not married to continued to report that they did not perceive themselves at any real risk of HIV infection as late as 1998. Suffice it to say that among men and women, people who did report recent risk behaviour were significantly less likely to say they were at risk for infection than people who did not report any unprotected non-marital sex, after controlling for education, residence and other factors ($p<0.001$ for both sexes).

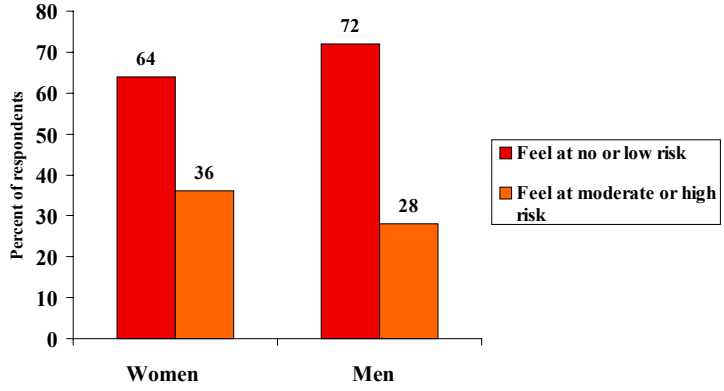
The proportion of men and women who have recently had unprotected sex with a non-marital partner and who feel at risk for HIV infection appears to have fallen in recent years, but this is probably due to differences in the way the question was asked, and the data are not shown here.

Figure 7.1
Risk behaviours reported by single respondents according to whether they spontaneously mentioned the behaviour as a risk factor, 1998*



* For sex with more than one partner and sex without a condom, denominator is sexually active singles

Figure 7.2
Proportion of 15- to 24-year-olds who have had recent unprotected non-marital sex who say they feel at risk for HIV infection, Kenya 1998



Voluntary counselling and testing (VCT) for youth

A study in Nairobi in May 2000 reported that youths would like access to HIV testing and counselling services if the services are confidential and inexpensive and if the results are reported honestly. However, through focus group discussions, in-depth interviews and a small survey of young people aged 14-21 (105 tested and 122 untested) many barriers were identified. Youth-friendly services are hard to find. Service providers are not equipped to respond to youth issues. The conventional VCT model of pretest and posttest counselling followed by follow up counselling and support is not followed in many instances. For example, one in five of all tested youth did not talk to a health worker before taking the test. Only 58% received posttest counselling, while 23% learned their test result only in writing and 8% learned their results through their parents, indicating that confidentiality was not maintained. Also, 93% of tested youth received no referrals. The study concludes that youth-friendly services are much needed, either in a separate centre or as a special track in existing VCT facilities (Horizons, 2001).

8. HIV prevalence levels

The levels of risk behaviour described above have implications for the spread of HIV among young people in Kenya. The most common source of information about HIV prevalence in general populations come from sentinel surveillance systems: routine testing of anonymous blood samples taken from pregnant women attending public antenatal clinics. Kenya has a relatively good sentinel surveillance system, which includes clinics in urban and peri-urban areas. Data have routinely been reported only for the 15- to 49-year-old age range, but have recently been analysed for some sites in 10-year age bands including the 15- to 24-year-olds. Figure 8.1 shows these data for the 1990s, giving the unweighted total of samples testing positive across all sites. The information for each year may not be directly comparable, since different numbers of sites report each year.[12] But overall, it is clear that there is no significant downward trend in HIV infection over this period.

Another source of information on HIV prevalence rates in pregnant women in this age group comes from a University of Nairobi study undertaken in four clinics in the capital city, Nairobi (Figure 8.2). Again, there is no evidence of any decline in infection in this age group over the 1990s. HIV prevalence among young women was virtually identical to HIV prevalence among women across the whole reproductive age range, suggesting that roughly half of all existing infections among pregnant women are in those under age 24 (because women 15-24 are about half of all women 15-49).

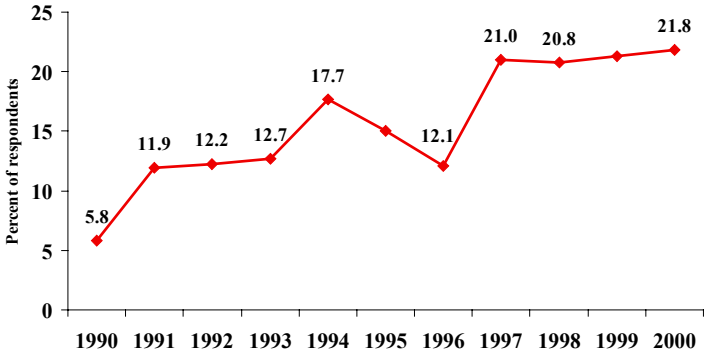
These data, while believed to be quite robust, do not give the full picture of HIV infection among young people in Kenya. In the first place, pregnant women attending public antenatal clinics are not representative of all pregnant women. Secondly, and more importantly, pregnant women are not representative of all women. Women who use contraceptives, including barrier contraceptives such as condoms, which protect against HIV, will not become pregnant. Nor will women who are not sexually active, and as we have seen a substantial proportion of teenage women are not having sex. Most obviously, pregnant women tell us nothing about HIV infection in the young male population. As in most countries, there is no routine testing system for young men in Kenya.

Only one study exists in Kenya that allows us to compare HIV rates among young people in all these different populations. The study was undertaken in 1997 in Kisumu, the main town in the western province of Nyanza, which was until recently the area of Kenya worst affected by HIV. HIV infection rates recorded among young people in Kisumu are summarised in Figure 8.3.

Three things are striking. The first is the remarkably high prevalence of HIV in young women in this part of Kenya: by their early 20s, nearly two women out of five were infected with the virus. The second is the huge gap in HIV infection rates between young men and young women at these ages: overall, women under 25 are nearly four times as likely to be infected as men in the same age group. The third point to note is the remarkable similarity in infection rates between pregnant women at antenatal clinics and all women in the general population. This would suggest that the infection rates shown in Figure 8.1 may well represent quite closely the true levels of HIV infection among young women in Kenya.

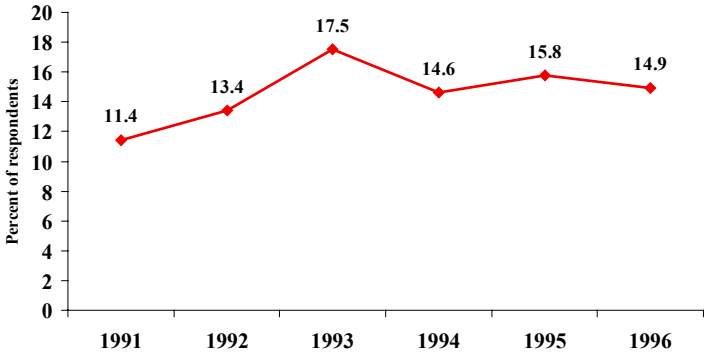
[12] In Figure 8.1, data for years with fewer than 1000 samples have been suppressed.

Figure 8.1
HIV prevalence among antenatal women 15-24, 1990-2000



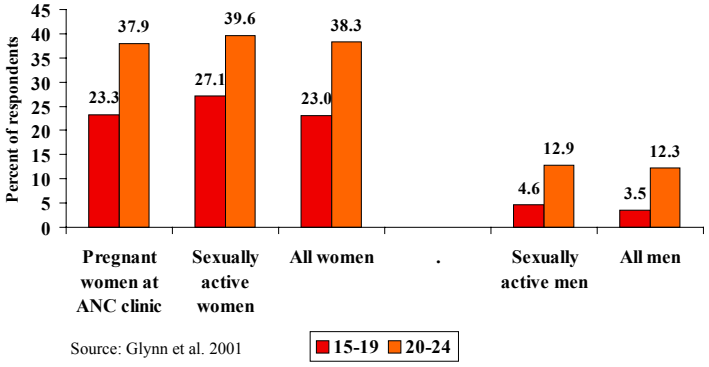
Source: Kenya National AIDS Control Programme

Figure 8.2
HIV prevalence among antenatal women 15-24 in four Nairobi clinics, 1991-1996



Source : Jackson et al., 1999

Figure 8.3
HIV prevalence in population-based survey in Kisumu, 1997



Source: Glynn et al. 2001

Table 8.1: Prevalence of other sexually transmitted infections among young people, Kisumu, 1997.

STI	Men		Women	
	15-19	20-24	15-19	20-24
Gonorrhoea[1]	0.0%	0.0%	1.9%	0.6%
Chlamydial infection[1]	3.9%	3.8%	9.2%	4.7%
Syphilis[2]	0.7%	1.8%	3.4%	4.4%
Trichomoniasis[3]	-	-	33.7%	32.8%
Herpes Simplex Virus 2 (HSV-2)[4]	8.4%	17.2%	39.0%	65.8%

1 Polymerase chain reaction and confirmatory LCX test on urine sample; 2 Rapid plasma reagin card test and Serodia Treponema Pallidum Particle Agglutination test (TPPA) on serum sample; 3 InPouch TV on self administered vaginal swab; 4 HSV specific IgG IEA (Gull test) on serum sample

The differences in infection rates between young women and young men are worth considering in greater detail. Twenty-six percent of unmarried, sexually active women aged 15-24 in the Kisumu study were infected with HIV, compared with 7% of unmarried, sexually active men the same age (Glynn, 2001). The only conclusion that can plausibly be drawn is that young women are becoming infected during premarital sex, and then going on to infect men closer to their own age. It appears as though young men are at far lower risk of infection than young women even though they report more sexual partners. One explanation for this is that while young men may have sex with a variety of partners, they do not necessarily have sex very frequently with any one partner. So even if they have unprotected sex with a young woman who is herself HIV-infected, they may escape contracting the virus. Once they get married and have sex repeatedly with that same woman, however, the chances are that they will eventually become infected with HIV. In the Kisumu study, 26% of 20- to 24-year-old men who were married were infected with HIV, compared with 8.3% of unmarried men the same age.

If non-marital sexual relationships between older men and younger women are, as seems likely from available data, an important force driving the HIV epidemic in Kenya, then discouraging these relationships might contribute to reducing the spread of the virus. Unfortunately, DHS data sets do not allow for analysis of age differences among sexual partners except within marriage.

Prevalence of other sexually transmitted infections among young people

In a household survey in Kisumu in 1997, biological specimens were collected from about 300 men and 300 women aged 15-24 to assess the prevalence of a range of sexually transmitted infections (STIs) (data from Buve et al., 2001a; Buve et al., 2001b; Weiss et al., 2001). Table 8.1 shows very high prevalences of trichomoniasis and HSV-2 among young women. Already at ages 15-19 more than one-third of girls are infected. Chlamydial infection was also commonly found. Among young men, HSV-2 is the most common STI, followed by chlamydial infection (no testing for trichomoniasis, which can often be asymptomatic in young men, was done).

Why do young women have much higher HIV prevalence than young men?

A household survey in Kisumu in 1997 found a significant difference in HIV prevalence between women and men (Glynn et al., 2001). HIV prevalence in sexually active women aged 15-19 was six times that of HIV prevalence in sexually active men. At ages 20-24, prevalence among women was three times that of men. HIV prevalence among sexually active young women was 27.1% and 39.8% at ages 15-19 and 20-24 years respectively. Among men the corresponding figures were 4.6% and 12.9%.

The Kisumu study – and a similar study in Ndola, Zambia – did not find strong evidence for behavioural explanations of the large differences in risk of HIV infection by gender. Women tended to have older partners and young men mostly had sex with women younger than themselves. However, the study indicated that young men and young women had almost equally high risks of encountering an HIV infected partner; for young women this would be an older man, for young men this would be a young woman. The authors of this study argued that increased susceptibility among women would be a more likely explanation.

Summary

Overall, living conditions for adolescent Kenyans changed little over the 1990s, although access to the media rose, employment opportunities fell and populations appear to have become more mobile. At the end of the 1990s very high proportions of young Kenyans had no more than a primary education. It was common for primary schooling to continue into the later teen years. Knowledge of HIV has been high throughout the study period for both sexes, but there have been significant gains in depth of knowledge.

In terms of sexual behaviour, it is clear that abstinence until marriage remains the exception rather than the rule for both sexes. There has been little discernible change in age at first sex for either boys or girls, with a median age at first sex among women aged 15-24 of 17.2 throughout the 1990s. Among men, median age at first sex was reported to be around 1.2 years lower than for women in the years when data were available. Age at first marriage is consistently higher than age at first sex for both sexes.

The majority of young Kenyans of both sexes have sex before marriage, and more than one premarital partner also appears to be the norm. There was a slight reduction in recent multiple partnerships reported by women over the 1990s, although a similar pattern was not clearly seen among men. While it is difficult to verify this using available data, it seems likely that people are acting on the "stick to one partner" message by reducing concurrent partnerships, but are continuing to engage in serial monogamy. With HIV infection rates so high in the pool of potential partners, this cannot be regarded as an effective response among young people wanting to protect themselves from HIV.

The biggest change observed was in condom use. Condom use rose significantly among both women and men, although the rise has been most striking among men. Condom use is highest among those who report multiple lifetime partners, but men and women who had sex with multiple partners in the last year – those at highest risk for infection – are not any more likely to have used a condom at last sex than those who are currently monogamous. Consistency of condom use is questionable. In 1998, over 90% of sexually active women and 70% of sexually active men did not use a condom with their most recent non-marital partner.

There is a remarkable consistency in sexual behaviour across urban and rural areas for both sexes. There is also a striking effect of educational level. Women with some secondary education are less likely to register risky behaviour on almost every indicator, even taking into account variations in age and residence. Among men, on the other hand, level of education has virtually no effect on risky behaviour, except for condom use which rose significantly with education.

Using a minimum measure of recent unprotected sex with a non-marital partner, risk behaviour has fallen by about 29% among young Kenyans over the 1990s, with a larger fall among men than among women. This can be attributed largely to an increase in condom use. However, significant levels of risk behaviour remain, with about 15% of young men and women reporting some recent risky sex by 1998.

Certainly, the fall in risk behaviour does not seem to be reflected in any fall in levels of HIV infection among young people. This is to be expected. The higher the background level of HIV prevalence in a population, the smaller the amount of risk behaviour needed to maintain incidence levels. This is especially true where mortality is also high. Continuing high prevalence in a high-mortality epidemic means that the large numbers of deaths are being replaced with an equally

large number of new infections. Since people are highly infectious when they are newly infected with HIV, large numbers of newly infected people create conditions for a particularly high epidemic growth.[13]

HIV prevalence among adults in Kenya was estimated at 5% in 1990, the year of the first study of sexual behaviour, and at 13% in 1998, the year of the most recent study – a rise of 160%. And there was no indication that the number of those who were newly infected was on the decline. It is likely, then, that on average a young person having sex with a partner chosen at random from the adult population would be well over twice as likely to encounter an infected partner in 1998 as in 1990.[14] Just to stay at the same level of risk of infection on a population level, unprotected sex would have had to fall by nearly two-thirds over that period. And yet overall levels of unprotected sex outside of marriage dropped by less than half that amount over the interval. In other words, because of a rise in HIV prevalence in the general population, the risk of having sex with an HIV-infected person for young people in Kenya may actually have nearly doubled over the 1990s even though absolute levels of risk behaviour fell.

This increased risk has not found its way into young people's thinking. The level of correct knowledge about what constitutes risky behaviour for HIV is high. However, the fact that very few of the sizeable proportion of young Kenyans who are having unprotected sex outside marriage feel at any risk for the virus is of great concern, since one in five of the pregnant women tested for HIV in 2000 were infected.

[13] HIV-infected individuals are most infectious when viral loads are high, which occurs soon after infection (before an antibody response reduces viral load) and towards the end of people's lives, when the immune system is irreparably damaged. Because people with advanced HIV infection are less likely to be sexually active, newly infected individuals are most likely to pass HIV on to other people.

[14] This would not hold true if women were responding to the HIV epidemic by increasingly sticking to partners of their own age, since men closer to their own age are less likely to be infected than older men. Data on age mixing are not available except in Kisumu, but very high rates of infection among young women nationwide suggest no reduction in unprotected sex between young women and older men in Kenya.

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APPENDIX A: BACKGROUND

Table A1. Some socioeconomic variables

	DHS 1989	GPA 1990		DHS 1993		DHS 1998	
	Women	Women	Men	Women	Men	Women	Men
Total Sample	2818			3392	526	3399	1400
Has electricity at home							
15-24	12.3	N/A	N/A	13.4	N/A	15.5	N/A
15-19	11.6	N/A	N/A	11.9	N/A	14.2	N/A
20-24	13.0	N/A	N/A	15.0	N/A	17.2	N/A
Has electricity at home							
Urban	43.1	N/A	N/A	50.7	N/A	51.0	N/A
Rural	3.9	N/A	N/A	4.4	N/A	3.6	N/A
Listened to radio regularly							
15-24	74.6			67.4	N/A	56.3	78.6
15-19	71.8			67.7	N/A	51.2	75.9
20-24	77.9			67.2	87.9	62.4	82.3
Listened to radio regularly							
Urban	84.6			80.3	95.4	70.8	81.8
Rural	72.0			64.3	85.7	51.4	77.7
Watched TV weekly							
15-24				18.0	N/A	27.6	46.8
15-19				18.7	N/A	27.1	44.0
20-24				17.4	34.7	28.1	50.5
Watched TV weekly							
Urban				49.5	58.9	57.7	76.2
Rural				10.4	27.5	17.4	38.5
Reads newspaper weekly							
15-24				38.5	N/A	43.0	57.4
15-19				38.1	N/A	41.6	51.6
20-24				38.9	63.2	44.6	65.4
Reads newspaper weekly							
Urban				56.1	85.3	60.7	84.3
Rural				34.2	56.6	37.0	49.8

Table A2. Educational attainment

	DHS 1989	GPA 1990		DHS 1993		DHS 1998	
	Women	Women	Men	Women	Men	Women	Men
Total Sample	2818			3392	526	3399	1400
Urban youths no longer in school							
15	N/A	N/A	N/A	44.2	N/A	57.1	16.6
16	N/A	N/A	N/A	53.9	N/A	64.8	11.1
17	N/A	N/A	N/A	65.0	N/A	66.7	28.2
18	N/A	N/A	N/A	87.4	N/A	70.0	58.0
19	N/A	N/A	N/A	92.6	N/A	86.9	94.6
Urban youths currently in primary school							
15	N/A	N/A	N/A	48.1	N/A	27.6	62.2
16	N/A	N/A	N/A	18.7	N/A	11.2	38.2
17	N/A	N/A	N/A	7.0	N/A	11.6	16.0
18	N/A	N/A	N/A	3.2	N/A	9.0	0.0
19	N/A	N/A	N/A	0.0	N/A	2.9	0.0
Urban youths currently in secondary school							
15	N/A	N/A	N/A	7.8	N/A	15.3	21.3
16	N/A	N/A	N/A	27.5	N/A	24.0	50.7
17	N/A	N/A	N/A	28.0	N/A	21.7	55.8
18	N/A	N/A	N/A	9.5	N/A	20.9	42.0
19	N/A	N/A	N/A	7.5	N/A	10.2	5.4
Rural youths no longer in school							
15	N/A	N/A	N/A	22.4	N/A	17.2	15.9
16	N/A	N/A	N/A	29.4	N/A	19.4	28.6
17	N/A	N/A	N/A	44.8	N/A	46.4	35.9
18	N/A	N/A	N/A	66.5	N/A	65.1	52.5
19	N/A	N/A	N/A	78.1	N/A	80.7	72.1
Rural youths currently in primary school							
15	N/A	N/A	N/A	73.5	N/A	75.4	78.4
16	N/A	N/A	N/A	57.6	N/A	66.5	56.8
17	N/A	N/A	N/A	40.5	N/A	33.3	44.5
18	N/A	N/A	N/A	20.2	N/A	15.7	21.0
19	N/A	N/A	N/A	7.9	N/A	8.4	10.7
Rural youths currently in secondary school							
15	N/A	N/A	N/A	4.1	N/A	7.4	5.7
16	N/A	N/A	N/A	13.0	N/A	14.1	14.6
17	N/A	N/A	N/A	14.7	N/A	20.3	19.6
18	N/A	N/A	N/A	13.3	N/A	19.2	26.4
19	N/A	N/A	N/A	14.0	N/A	11.0	17.2

Table A3. Unemployment among those no longer in school

	DHS 1989	GPA 1990		DHS 1993		DHS 1998	
	Women	Women	Men	Women	Men	Women	Men
Total Sample	2818			3392	526	3399	1400
Currently not working							
15-24	N/A	N/A	N/A	55.7	N/A	53.0	47.2
15-19	N/A	N/A	N/A	60.6	N/A	59.3	61.7
20-24	N/A	N/A	N/A	52.8	10.4	49.0	38.4
Currently not working							
Single	N/A	N/A	N/A	57.3	13.1	57.5	52.8
Married	N/A	N/A	N/A	54.3	1.9	49.2	17.0
Currently not working among 20-24 year olds							
Primary or less	N/A	N/A	N/A	53.9	5.1	48.7	31.9
Secondary or more	N/A	N/A	N/A	50.2	18.6	49.7	47.6

Table A4. Marriage pattern

	DHS 1989	GPA 1990		DHS 1993		DHS 1998	
	Women	Women	Men	Women	Men	Women	Men
Total Sample	2818			3392	526	3399	1400
Currently married							
15-24	39.1	37.2	9.2	35.3	N/A	36.3	7.2
15-19	18.4	15.1	1.4	14.9	N/A	15.4	1.0
20-24	62.6	60.3	17.5	57.2	19.3	61.3	16.1

Table A5. Contraception, pregnancy and child bearing among young women and men

	DHS 1989	GPA 1990		DHS 1993		DHS 1998	
	Women	Women	Men	Women	Men	Women	Men
Total Sample	2818			3392	526	3399	1400
Has ever been pregnant of all young people							
Never pregnant	48.4	N/A	N/A	53.9	N/A	54.7	N/A
Premarital pregnancy	23.5	N/A	N/A	21.4	N/A	20.0	N/A
First birth after marriage	28.1	N/A	N/A	24.7	N/A	25.3	N/A
Has ever been pregnant of youth aged 15-19							
Never pregnant	74.6	N/A	N/A	79.5	N/A	78.5	N/A
Premarital pregnancy	14.6	N/A	N/A	12.8	N/A	12.1	N/A
First birth after marriage	10.8	N/A	N/A	7.7	N/A	9.5	N/A
Has ever been pregnant of youth aged 20-24							
Never pregnant	18.7	N/A	N/A	26.6	N/A	26.1	N/A
Premarital pregnancy	33.6	N/A	N/A	30.6	N/A	29.5	N/A
First birth after marriage	47.7	N/A	N/A	42.8	N/A	44.4	N/A
Has ever been pregnant of all sexually active young people							
Never pregnant	22.6	N/A	N/A	30.3	N/A	27.2	N/A
Premarital pregnancy	32.9	N/A	N/A	29.9	N/A	29.9	N/A
First birth after marriage	44.5	N/A	N/A	39.8	N/A	42.9	N/A
Has ever been pregnant of sexually active youth aged 15-19							
Never pregnant	42.0	N/A	N/A	55.3	N/A	48.2	N/A
Premarital pregnancy	31.8	N/A	N/A	26.1	N/A	28.0	N/A
First birth after marriage	26.2	N/A	N/A	18.6	N/A	23.8	N/A
Has ever been pregnant of sexually active youth aged 20-24							
Never pregnant	12.3	N/A	N/A	17.3	N/A	15.5	N/A
Premarital pregnancy	33.5	N/A	N/A	31.8	N/A	30.9	N/A
First birth after marriage	54.2	N/A	N/A	50.9	N/A	53.5	N/A
Has ever been pregnant, of singles who had sex in the last year							
15-24	49.3	N/A	N/A	36.7	N/A	38.8	N/A
15-19	36.0	N/A	N/A	27.0	N/A	30.3	N/A
20-24	65.4	N/A	N/A	50.0	N/A	51.2	N/A
Has ever been pregnant, of singles who had sex in the last year							
Urban	41.3	N/A	N/A	32.7	N/A	32.1	N/A
Rural	52.3	N/A	N/A	43.0	N/A	41.9	N/A
Total	49.7	N/A	N/A	40.8	N/A	38.8	N/A

Table A5. Contraception, pregnancy and child bearing among young women and men (cont.)

	DHS 1989	GPA 1990		DHS 1993		DHS 1998	
	Women	Women	Men	Women	Men	Women	Men
Total Sample	2818			3392	526	3399	1400
Currently using modern contraceptives for all young people who had sex in the last year							
15-24	9.9	N/A	N/A	14.6	N/A	19.2	41.0
15-19	4.7	N/A	N/A	5.5	N/A	11.1	37.8
20-24	12.7	N/A	N/A	19.4	29.7	23.7	43.6
Currently using modern contraceptives for all young people who had sex in the last year							
Urban	15.6	N/A	N/A	23.3	43.1	29.4	49.1
Rural	8.0	N/A	N/A	12.4	25.6	15.3	38.7
Currently using modern contraceptives for all young people who had sex in the last year							
Single	9.2	N/A	N/A	11.5	32.5	15.9	43.5
Married	10.2	N/A	N/A	16.3	20.8	20.9	27.4
Currently using modern contraceptives for all young people who had sex in the last year							
Primary or less	7.6	N/A	N/A	12.1	27.2	15.9	33.6
Secondary or more	16.6	N/A	N/A	22.4	32.7	28.1	53.2
Currently using modern contraceptives for singles who had sex in the last year							
15-24	9.2	N/A	N/A	11.5	N/A	15.9	43.5
15-19	3.0	N/A	N/A	5.3	N/A	12.1	38.3
20-24	16.7	N/A	N/A	20.1	32.5	21.4	49.1

Table A6. Population mobility

	DHS 1989	GPA 1990		DHS 1993		DHS 1998	
	Women	Women	Men	Women	Men	Women	Men
Total Sample	2818			3392	526	3399	1400
Lived in place of residence less than 5 years							
15-24	28.9	N/A	N/A	23.2	N/A	38.3	17.4
15-19	25.4	N/A	N/A	20.3	N/A	31.1	10.1
20-24	32.9	N/A	N/A	26.4	24.8	46.9	27.3
Lived in place of residence less than 5 years *							
Non-migrants	71.1	N/A	N/A	76.8	75.2	61.8	82.7 (72.7)
Migrants in urban areas	17.3	N/A	N/A	15.3	12.6	23.9	10.5 (15.4)
Migrants in rural areas	11.6	N/A	N/A	8.0	12.2	14.3	6.8 (11.9)

* Second set of numbers in parentheses in 1998 are for 20- to 24-year-olds.

APPENDIX B: KNOWLEDGE

Table B1. Trends in knowledge about HIV/AIDS among young women in Kenya from 1990-1998

	1990* % (N)	1993 % (N)	1998 % (N)
Knows of AIDS			
15-24+	89.8 (576)	98.2 (3392)	99.0 (3399)
15-19	91.3 (291)	98.0 (1754)	98.7 (1851)
20-24	88.2 (285)	98.4(1638)	99.3 (1548)
Can name at least 3 correct ways of preventing AIDS			
15-24	N/A	.9 (3392)	4.5 (3399)
15-19	N/A	.8 (1754)	4.4 (1851)
20-24	N/A	1.0 (1638)	4.7 (1548)
Can name at least 1 correct way of preventing AIDS			
15-24	37.5 (576)	72.2 (3392)	66.5 (3399)
15-19	38.4 (291)	69.2 (1754)	61.8 (1851)
20-24	36.6 (285)	75.5 (1638)	72.2 (1548)
Can name at least 1 correct way of preventing AIDS among 15-19 years old			
Urban	26.8 (138)	70.9 (275)	69.2 (408)
Rural	41.8 (153)	68.8 (1478)	59.6 (1443)
Can name at least 1 correct way of preventing AIDS among 15-19-year-olds			
Primary or less	36.2 (199)	64.0 (1379)	57.2 (1421)
Secondary or more	44.6 (92)	88.1 (375)	76.6 (431)
Knows a healthy-looking person can have AIDS			
15-24	16.4 (576)	73.6 (3392)	74.1 (3399)
15-19	18.0 (291)	70.2 (1754)	67.3 (1851)
20-24	14.7 (285)	77.4 (1638)	82.3 (1548)
Knows a healthy-looking person can have AIDS			
Urban	13.5 (281)	86.1 (660)	85.3 (858)
Rural	17.3 (295)	70.7 (2731)	70.3 (2541)
Knows a healthy-looking person can have AIDS			
Primary or less	16.2 (380)	67.6 (2487)	67.8 (2400)
Secondary or less	17.0 (196)	90.4 (905)	89.3 (999)
Has no major misconceptions about HIV			
15-24	N/A	26.0 (3392)	79.3 (3399)
15-19	N/A	24.1 (1754)	74.0 (1851)
20-24	N/A	28.1 (1638)	85.7 (1548)
Can name at least 1 correct way of preventing AIDS and has no major misconceptions			
15-24	N/A	21.7 (3392)	52.4 (3399)
15-19	N/A	19.5 (1754)	45.9 (1851)
20-24	N/A	24.1 (1638)	60.3 (1548)

* The 1990 data are from the WHO GPA Survey. All other data are from the Demographic Health Surveys.
+ About 6.4% (n=39) of data was missing. The proportion who knows AIDS was 96.9% when excluded.

Table B2. Trends in knowledge about HIV/AIDS among young men in Kenya from 1990-1998

	1990* % (N)	1993 % (N)	1998 % (N)
Knows of AIDS			
15-24+	89.3 (402)	N/A	99.1 (1400)
15-19	86.3 (197)	N/A	99.2 (811)
20-24	92.4 (205)	100 (526)	99.0 (589)
Can name at least 3 correct ways of preventing AIDS			
15-24	N/A	N/A	2.6 (1400)
15-19	N/A	N/A	2.1 (811)
20-24	N/A	1.9 (526)	3.3 (589)
Can name at least 1 correct way of preventing AIDS			
15-24	30.3 (402)	N/A	80.5 (1400)
15-19	31.9 (197)	N/A	78.2 (811)
20-24	28.5 (205)	83.8 (526)	83.7 (589)
Can name at least 1 correct way of preventing AIDS among 20-24 year-olds			
Urban	23.2 (95)	87.8 (121)	89.9 (175)
Rural	30.0 (110)	82.6 (405)	81.2 (414)
Can name at least 1 correct way of preventing AIDS among 20-24 year-olds			
Primary or less	29.7 (89)	80.2 (294)	79.6 (326)
Secondary or more	27.3 (116)	88.4 (232)	88.9 (263)
Knows a healthy-looking person can have AIDS			
15-24	15.7 (402)	N/A	80.2 (1400)
15-19	11.7 (197)	N/A	74.4 (811)
20-24	19.8 (205)	88.4 (526)	88.1 (589)
Knows a healthy-looking person can have AIDS			
Urban	7.7 (168)	93.7 (121)	87.0 (308)
Rural	17.5 (234)	86.8 (405)	78.4 (1092)
Knows a healthy-looking person can have AIDS			
Primary or less	13.1 (212)	83.7 (294)	73.1 (916)
Secondary or more	19.5 (190)	94.3 (232)	93.8 (484)
Has no major misconceptions about HIV			
15-24	N/A	N/A	79.5 (1400)
15-19	N/A	N/A	74.0 (811)
20-24	N/A	27.6 (526)	87.0 (589)
Can name at least 1 correct way of preventing AIDS and has no major misconceptions			
15-24	N/A	N/A	66.6 (1400)
15-19	N/A	N/A	61.4 (811)
20-24	N/A	25.5 (526)	73.9 (589)

* The 1990 data are from the WHO GPA Survey. All other data are from the Demographic Health Surveys.
+ About 5.7% (n=23) of data was missing. The proportion who knows AIDS was 96.3% when excluded.

APPENDIX C: SEXUAL ACTIVITY

Table C1. Trends in sexual activity among young women in Kenya from 1989-1998.

	1989 % (N)	1990* % (N)	1993 % (N)	1998 % (N)
Sexually active by 15				
15-24	30.1 (2818)	25.5 (576)	30.1 (3392)	28.8 (3399)
15-19	27.7 (1497)	28.8 (291)	26.5 (1754)	25.0 (1851)
20-24	32.9 (1321)	22.0 (285)	34.0 (1638)	33.3 (1548)
Sexually active by 15				
Urban	29.2 (2216)	24.6 (295)	31.3 (2731)	29.5 (2541)
Rural	33.3 (602)	25.8 (281)	25.4 (661)	26.8 (858)
Sexually active by 15				
Primary or less	34.2 (2032)	28.5 (380)	34.9 (2487)	33.8 (2400)
Secondary or more	19.3 (783)	17.9 (196)	16.8 (905)	16.9 (999)
Sexually active by 18 (of those aged 18+)				
15-24	70.1 (1959)	64.2 (416)	68.9 (2346)	69.3 (2344)
15-19	66.0 (638)	64.3 (132)	64.7 (708)	64.4 (796)
20-24	72.1 (1321)	64.2 (284)	70.7 (1638)	71.7 (1548)
Median age at first sex				
15-24	16.9	N/A	17.3	17.3
15-19	17.5	N/A	17.7	17.6
20-24	16.5	N/A	17.0	17.1
Ever had premarital sex of those still single				
15-24	44.1 (1616)	39.6 (281)	45.4 (2050)	41.6 (2084)
15-19	32.2 (1195)	35.1 (211)	35.4 (1470)	32.3 (1543)
20-24	77.7 (421)	54.7 (70)	70.9 (580)	68.2 (541)
Had premarital sex in the last year, of those still single				
15-24	33.0 (1616)	27.4 (281)	34.6 (2050)	32.4 (2084)
15-19	24.2 (1195)	26.1 (211)	28.0 (1470)	25.6 (1543)
20-24	57.4 (421)	31.6 (70)	51.3 (580)	50.6 (541)
Had premarital sex in the last year, of those still single				
Urban	45.7 (304)		39.8 (417)	39.8 (528)
Rural	30.1 (1312)		33.3 (1633)	29.5 (1556)
Had premarital sex in the last year, of those still single				
Primary or less	33.0 (1120)		33.3 (1399)	32.2 (1385)
Secondary or more	33.0 (496)		37.4 (651)	32.1 (699)

* The 1990 data are from the WHO GPA Survey on AIDS. All other data are from the Demographic Health Surveys.

Table C2. Trends in sexual activity among young men in Kenya from 1990-1998.

	1990* % (N)	1993 % (N)	1998 % (N)
Sexually active by 15			
15-24	38.8 (402)	N/A	43.9 (1400)
15-19	36.4 (197)	N/A	40.2 (811)
20-24	41.4 (205)	45.9 (526)	49.0 (589)
Sexually active by 15			
Urban	40.5 (234)	47.2 (405)	44.9 (1092)
Rural	38.5 (168)	41.6 (121)	40.2 (308)
Sexually active by 15			
Primary or less	34.6 (212)	46.3 (294)	42.9 (916)
Secondary or more	45.0 (190)	45.3 (232)	45.8 (484)
Sexually active by 18 (of those aged 18+)			
15-24	72.9 (281)	N/A	77.0 (901)
15-19	70.3 (76)	N/A	74.1 (312)
20-24	73.9 (205)	85.5 (526)	78.6 (589)
Median age at first sex			
15-24	N/A	N/A	16.4
15-19	N/A	N/A	16.5
20-24	N/A	16.2	16.0
Ever had premarital sex			
15-24	51.9 (286)	N/A	65.6 (1260)
15-19	36.6 (168)	N/A	53.3 (804)
20-24	75.8 (118)	92.4 (411)	87.3 (456)
Had premarital sex in the last year, of those still single			
15-24	39.9 (268)	N/A	56.1 (1260)
15-19	24.6 (168)	N/A	45.6 (804)
20-24	63.8 (118)	85.9 (411)	74.7 (456)
Had premarital sex in the last year, of those still single			
Urban		86.7 (95)[1]	55.6 (266)[2]
Rural		85.6 (316)[1]	56.2 (994)[2]
Had premarital sex in the last year, of those still single			
Primary or less		85.7 (216)[1]	52.3 (812)[2]
Secondary or more		86.1 (195)[1]	63.1 (448)[2]

1. For 20- to 24-year-olds only.
2. For 15- to 24-year-olds.

* The 1990 data are the WHP GPA Survey. All other data are from the Demographic Health Surveys.

APPEDNIX D: PARTNER RATES

Table D1. Partner rates in young women in Kenya from 1990-1998.

	1990* % (N)	1993 % (N)	1998 % (N)
Percent of sexually active (ever had sex) single with more than one lifetime partner			
15-24	N/A	56.5 (932)	N/A
15-19	N/A	47.7 (520)	N/A
20-24	N/A	67.7 (412)	N/A
Percent of sexually active (ever had sex) single aged 20-24 with more than one lifetime partner			
Urban	N/A	70.4 (132)	N/A
Rural	N/A	66.4 (280)	N/A
Percent of sexually active (ever had sex) single aged 20-24 with more than one lifetime partner			
Primary or less	N/A	73.7 (204)	N/A
Secondary or more	N/A	61.7 (208)	N/A
Percent of sexually active (ever had sex) married with more than one lifetime partner			
15-24	N/A	58.6 (1196)	N/A
15-19	N/A	57.7 (260)	N/A
20-24	N/A	58.9 (936)	N/A
Sex with more than one partner in last year, of single with sex in last year (1993 six months)			
15-24	19.1 (83)	19.2 (603)	12.7 (669)
15-19	18.0 (57)	20.4 (350)	12.8 (395)
20-24	22.1 (26)	17.6 (253)	12.7 (274)
Sex with more than one partner in last year, of single with sex in last year (1993 six months)			
Urban	34.7 (49)	19.2 (454)	13.7 (210)
Rural	11.8 (34)	19.2 (148)	12.3 (459)
Sex with more than one partner in last year, of single with sex in last year (1993 six months)			
Primary or less	20.3 (50)	22.0 (398)	15.9 (445)
Secondary or more	16.7 (33)	13.8 (204)	6.5 (224)
Sex with more than one partner in last year, of teenagers with sex in last year (1993 six months)			
Out of school	N/A	10.4 (543)	10.1 (548)
In school	N/A	19.6 (119)	6.1 (148)
Sex with more than one partner in last year, of married with sex in last year (1993 six months)			
15-24	3.6 (129)	2.6 (1097)	2.0 (1214)
15-19	3.1 (26)	3.6 (242)	5.1 (279)
20-24	3.8 (103)		1.1 (935)

* The 1990 data are from the WHO GPA Survey on AIDS. All other data are from the Demographic Health Surveys.

Table D1. Partner rates in young women in Kenya from 1990-1998 (cont.)

	1990* % (N)	1993 % (N)	1998 % (N)
Sex with more than one partner in last year, of all young people			
15-24	5.5 (576)	4.5 (3392)	3.4 (3399)
15-19	5.9 (291)	4.7 (1754)	3.5 (1851)
20-24	5.1 (285)	4.3 (1638)	3.3 (1548)

* The 1990 data are from the WHO GPA Survey on AIDS. All other data are from the Demographic Health Surveys.

Table D2. Partner rates in young men in Kenya from 1989-1998.

	1990* % (N)	1993 % (N)	1998 % (N)
Percent of sexually active single with more than one lifetime partner			
15-24	N/A	N/A	N/A
15-19	N/A	N/A	N/A
20-24	N/A	91.1 (380)	N/A
Percent of sexually active single aged 20-24 with more than one lifetime partner			
Urban	N/A	92.1 (90)	N/A
Rural	N/A	90.7 (290)	N/A
Percent of sexually active single aged 20-24 with more than one lifetime partner			
Primary or less	N/A	88.3 (198)	N/A
Secondary or more	N/A	94.1 (182)	N/A
Percent of sexually active married with more than one lifetime partner			
15-24	N/A	N/A	N/A
15-19	N/A	N/A	N/A
20-24	N/A	94.1 (101)	N/A
Sex with more than one partner in last year, of single with sex in last year (1993 six months)			
15-24	49.4 (111)	N/A	50.4 (707)
15-19	40.1 (38)	N/A	50.3 (367)
20-24	54.9 (73)	58.69 (335)	50.6 (340)
Sex with more than one partner in last year, of single with sex in last year (1993 six months)			
Urban	56.8 (44)	60.8 (75)[1]	51.2 (148)[2]
Rural	47.8 (67)	57.9 (260)[1]	50.2 (559)[2]
Sex with more than one partner in last year, of single with sex in last year (1993 six months)			
Primary or less	49.9 (52)	61.9 (180)[1]	56.4 (425)[2]
Secondary or more	48.8 (59)	54.7 (155)[1]	41.4 (282)[2]
Sex with more than one partner in last year, of teenagers with sex in last year (1993 six months)			
Out of school	N/A	N/A	51.7 (189)
In school	N/A	N/A	46.5 (169)
Sex with more than one partner in last year, of married with sex in last year (1993 six months)			
15-24	39.6 (18)	N/A	28.5 (94)
15-19	- (2)	N/A	- (6)
20-24	38.1 (16)	35.6 (97)	30.1 (88)
Sex with more than one partner in last year, of all young people			
15-24	24.5 (402)	N/A	28.8 (1400)
15-19	14.6 (197)	N/A	22.8 (811)
20-24	34.8 (205)	44.3 (526)	37.1 (589)

1. For 20- to 24-year-olds only.
2. For 15- to 24-year-olds.

* The 1990 data are from the WHO GPA Survey on AIDS. All other data are from the Demographic Health Surveys.

APPENDIX E: CONDOM USE

Table E1. Trends in condom use among young women in Kenya from 1989-1998.

	1989 % (N)	1990* % (N)	1993 % (N)	1998 % (N)
Ever used a condom, of singles who have ever had sex				
15-24	3.0 (712)	15.0 (112)	11.0 (932)	28.0 (867)
15-19	2.8 (385)	12.0 (73)	7.8 (520)	24.9 (499)
20-24	3.1 (326)	21.6 (39)	15.0 (412)	32.1 (368)
Ever used a condom, of singles who had sex in the last year				
15-24	3.5 (538)	19.1 (83)	12.3 (710)	30.8 (669)
15-19	3.0 (293)	13.5 (57)	8.7 (412)	27.4 (395)
20-24	4.2 (245)	34.9 (26)	17.3 (298)	35.8 (274)
Ever used a condom, of singles who had sex in the last year				
Urban	3.7 (139)	28.6 (49)	16.9 (166)	40.6 (210)
Rural	3.4 (399)	14.7 (34)	10.9 (544)	26.4 (459)
Ever used a condom, of singles who had sex in the last year				
Primary or less	2.8 (371)	16.3 (50)	7.3 (467)	26.5 (445)
Secondary or more	5.0 (167)	24.3 (33)	22.0 (243)	39.5 (224)
Ever used a condom, of singles with more than one partner in last year				
15-24	N/A	27.2 (21)	17.7 (116)	48.5 (85)
15-19	N/A	14.7 (12)	12.0 (72)	47.0 (50)
20-24	N/A	55.6 (9)	27.0 (44)	50.8 (35)
Used a condom last time, of singles who ever used a condom				
15-24	N/A	N/A	N/A	48.6 (250)
15-19	N/A	N/A	N/A	52.6 (130)
20-24	N/A	N/A	N/A	44.3 (120)
Used a condom last time, of singles who have had sex in the last year				
15-24	N/A	N/A	N/A	15.3 (669)
15-19	N/A	N/A	N/A	14.5 (395)
20-24	N/A	N/A	N/A	16.4 (274)
Used a condom last time, of singles aged 15-19 who have had sex in the last year				
Urban	N/A	N/A	N/A	20.3 (107)
Rural	N/A	N/A	N/A	12.3 (288)
Used a condom last time, of singles aged 15-19 who have had sex in the last year				
Primary or less	N/A	N/A	N/A	13.0 (304)
Secondary or more	N/A	N/A	N/A	19.6 (91)
Used a condom last time, of singles aged 20-24 who have had sex in the last year				
Urban	N/A	N/A	N/A	20.6 (103)
Rural	N/A	N/A	N/A	13.9 (171)

* The 1990 data are from the WHO GPA Survey on AIDS. All other data are from the Demographic Health Surveys.

Table E1. Trends in condom use among young women in Kenya from 1989-1998 (cont.)

	1989 % (N)	1990* % (N)	1993 % (N)	1998 % (N)
Used a condom last time, of singles aged 20-24 who have had sex in the last year				
Primary or less	N/A	N/A	N/A	11.1 (141)
Secondary or more	N/A	N/A	N/A	22.0 (133)
Used a condom last time, of singles with multiple partners in the last year				
15-24	N/A	N/A	N/A	14.5 (85)
15-19	N/A	N/A	N/A	14.7 (50)
20-24	N/A	N/A	N/A	14.3 (35)
Used a condom last time with a non-marital partner, of those married with an extramarital partner in the last year				
15-24	N/A	N/A	N/A	20.2 (23)
15-19	N/A	N/A	N/A	21.4 (13)
20-24	N/A	N/A	N/A	18.8 (10)
Used a condom last time with a non-marital partner, of all young people				
15-24	N/A	N/A	N/A	3.8 (3399)
15-19	N/A	N/A	N/A	3.9 (1851)
20-24	N/A	N/A	N/A	3.6 (1548)
Used a condom at first sex				
15-24	N/A	N/A	N/A	N/A
15-19	N/A	N/A	N/A	N/A
20-24	N/A	N/A	N/A	N/A

Table E2. Trends in Condom Use among Young Men from 1990-1998

	1990* % (N)	1993 % (N)	1998 % (N)
Ever used a condom, of singles who have ever had sex			
15-24	21.3 (153)	N/A	66.6 (827)
15-19	10.2 (63)	N/A	61.8 (429)
20-24	29.6 (90)	57.0 (380)	71.8 (398)
Ever used a condom, of singles aged 20-24 who had sex in the last year			
15-24	N/A	N/A	N/A
15-19	N/A	N/A	N/A
20-24	31.9 (73)	59.3 (353)	75.4 (340)
Ever used a condom, of singles aged 20-24 who had sex in the last year			
Urban	48.5 (33)	73.5 (83)	83.5 (91)
Rural	27.5 (40)	55.0 (270)	72.4 (249)
Ever used a condom, of singles aged 20-24 who had sex in the last year			
Primary or less	32.1 (29)	55.8 (185)	69.4 (174)
Secondary or more	31.8 (44)	63.1 (168)	81.8 (166)
Ever used a condom, of singles with more than one partner in last year			
15-24	28.0 (57)	N/A	74.4 (356)
15-19	19.0 (17)	N/A	71.6 (184)
20-24	31.9 (40)	63.6 (196)	77.4 (172)
Used a condom last time, of singles who ever used a condom			
15-24	N/A	N/A	60.4 (564)
15-19	N/A	N/A	55.4 (277)
20-24	N/A	N/A	65.2 (287)
Used a condom last time, of singles who have had sex in the last year			
15-24	N/A	N/A	43.5 (707)
15-19	N/A	N/A	37.9 (367)
20-24	N/A	N/A	49.5 (340)
Used a condom last time, of singles aged 15-19 who have had sex in the last year			
Urban	N/A	N/A	39.9 (56)
Rural	N/A	N/A	37.6 (311)
Used a condom last time, of singles aged 15-19 who have had sex in the last year			
Primary or less	N/A	N/A	32.4 (251)
Secondary or more	N/A	N/A	49.9 (116)
Used a condom last time, of singles aged 20-24 who have had sex in the last year			
Urban	N/A	N/A	54.4 (91)
Rural	N/A	N/A	47.7 (249)

* The 1990 data are from the WHO GPA Survey on AIDS. All other data are from the Demographic Health Surveys.

Table E2. Trends in Condom Use among Young Men from 1990-1998 (cont.)

	1990* % (N)	1993 % (N)	1998 % (N)
Used a condom last time, of singles aged 20-24 who have had sex in the last year			
Primary or less	N/A	N/A	42.3 (174)
Secondary or more	N/A	N/A	57.1 (166)
Used a condom last time, of singles with multiple partners in the last year			
15-24	N/A	N/A	43.0 (356)
15-19	N/A	N/A	38.1 (184)
20-24	N/A	N/A	48.3 (172)
Used a condom last time with a non-marital partner, of those married with an extramarital partner in the last year			
15-24	N/A	N/A	45.5 (31)
15-19	N/A	N/A	0.0 (1)
20-24	N/A	N/A	46.2 (30)
Used a condom last time with a non-marital partner, of all young people			
15-24	N/A	N/A	26.0 (1400)
15-19	N/A	N/A	18.9 (811)
20-24	N/A	N/A	35.8 (589)
Used a condom at first sex			
15-24	N/A	N/A	N/A
15-19	N/A	N/A	N/A
20-24	N/A	N/A	N/A

APPENDIX F: SEXUAL BEHAVIOUR

Table F1. Trends in sexual behaviour among young women from 1990-1998.

	1990* % (N)	1993 % (N)	1998 % (N)
Age mixing in sexual partnerships			
15-24	N/A	N/A	N/A
15-19	N/A	N/A	N/A
20-24	N/A	N/A	N/A
Recent unprotected sex with a non-marital partner			
15-24	23.1 (576)	21.2 (3392)	15.7 (3399)
15-19	26.8 (291)	22.2 (1754)	17.1 (1851)
20-24	19.1 (285)	20.0 (1638)	14.0 (1548)
Feel at moderate or high risk for AIDS. Of those with recent unprotected sex			
15-24	12.6 (139)	44.2 (718)	35.6 (534)
15-19	13.8 (80)	41.0 (390)	32.7 (316)
20-24	10.9 (59)	48.0 (328)	39.7 (217)

Table F2. Trends in sexual behaviour among young men from 1990-1998.

	1990* % (N)	1993 % (N)	1998 % (N)
Age mixing in sexual partnerships			
15-24	N/A	N/A	N/A
15-19	N/A	N/A	N/A
20-24	N/A	N/A	N/A
Recent unprotected sex with a non-marital partner			
15-24	44.1 (402)	N/A	15.4 (1400)
15-19	32.6 (197)	N/A	15.1 (811)
20-24	56.0 (205)	30.3 (526)	15.8 (589)
Feel at moderate or high risk for AIDS. Of those with recent unprotected sex			
15-24	41.9 (171)	N/A	28.3 (216)
15-19	17.2 (59)	N/A	29.9 (123)
20-24	28.9 (112)	63.3 (159)	26.2 (93)

* The 1990 data are from WHO GPA Survey on AIDS. All other data are from the Demographic Health Surveys.